

The

CONSTRUCTOR

OFFICIAL PUBLICATION OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA



Volume XXXIV

AUGUST 1952

Number 8

● BUILDINGS

● HIGHWAYS

● AIRPORTS

● RAILROADS

PUBLIC WORKS



NEW CONSTRUCTION
(Billions of Dollars)
CUMULATIVE

1952

1951

F M A M J J A S O N D

Steel Tight but Aluminum, Copper Eases—21
Union Heads Ban Jurisdictional Pickets—25
Roundup of Actions by 82nd Congress—32

Eaton Tandems give you all these important features—



EATON AXLES—the load-carrying and moving components—are performance-proved by thousands of units and millions of miles of service. They are installed in the position for which designed and, therefore, are not subject to abnormal stresses or to unnatural lubricating problems.

- The single drive line permits a natural angle and direct lead of the propeller shafts; eliminates excess parts; simplifies maintenance.
- The power divider, of simple design, assures the transmission of power equally to both axles.
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- The differential lock between forward and rear axles (optional on some models) is positive in action. With unfavorable road conditions such as mud, snow, and ice, this feature makes maximum traction available when required.

Your truck dealer will be glad to explain how Eaton Tandem Drive Axles give your trucks greater load capacity and at the same time reduce tire maintenance and operating costs.

EATON *Tandem Drive* **AXLES**

Axle Division

EATON MANUFACTURING COMPANY
CLEVELAND, OHIO



PRODUCTS: Sodium Cooled, Poppet, and Free Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Rotor Pumps • Motor Truck Axles • Permanent Mold Gray Iron Castings • Heater-Defroster Units • Snap Rings • Springtites • Spring Washers • Cold Drawn Steel • Stampings • Leaf and Coil Springs • Dynamatic Drives, Brakes, Dynamometers

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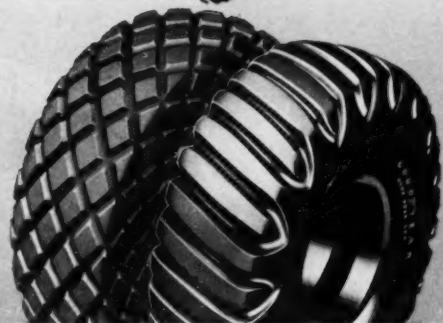
SURE-GRIP

Drive-wheel traction champ
for graders and scrapers.



here's the **FIRST CHOICE** tire

Sure-Grip in name, sure-grip in action—that's why this long-lasting Goodyear tire is the top favorite on earth-moving operations everywhere for drive wheels. Its specially engineered O-P-E-N C-E-N-T-E-R tread and extra-massive, balanced lugs are what make it the traction champ. *And cost-wise construction men know it.*



**There's a Cost-Cutting
Goodyear Tire For Every Job**

ALL-WEATHER

Finest for flotation,
rolling big loads faster

HARD ROCK LUG

Super-tough champ for
all kinds of rock work

Sure-Grip, All-Weather—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TIRES THAN ON ANY OTHER KIND



A Great Newspaper Scores Another 'BEAT'

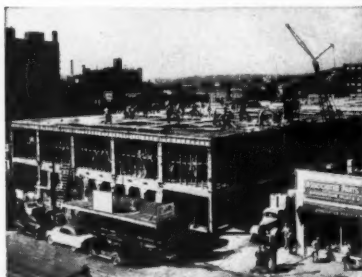
**KANSAS CITY STAR SOLVES PROBLEM OF HANDLING NEWSPRINT
—'INCOR' SPEEDS CONSTRUCTION OF UNDER-STREET TUNNEL**

• Many of the nation's metropolitan newspapers haul truckload after truckload of newsprint over busy city streets. But not The Kansas City Star. This great paper moves the 70,000 tons it uses each year direct from railroad car to press, on what is said to be the only conveyor line of its kind in use today.

A month's paper supply is stored in a fine, new, fire-safe warehouse, concreted throughout with Lone Star Cement. And under busy Grand Ave., a new tunnel connects the warehouse with The Star's main building.

Building the tunnel without tying up heavy Grand Avenue traffic was a problem. The designers and builders solved it in the now-characteristic American way—the way builders the country over score a "beat" when time, traffic, weather, and form costs pose a problem—that is, by using 'Incor.* America's FIRST high early strength portland cement. Result, earlier completion, less job overhead, minimum traffic interference.

*Reg. U.S. Pat. Off.

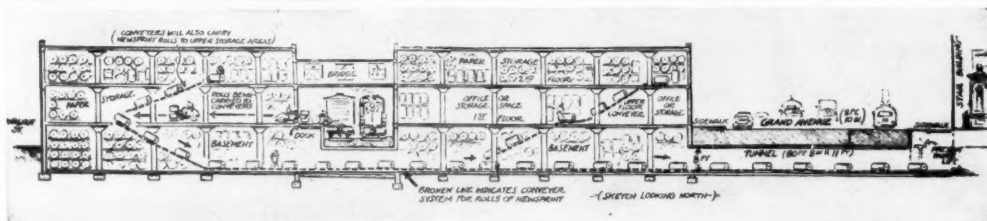


THE KANSAS CITY STAR
Paper Warehouse and Tunnel

Architects:
NEVILLE, SHARP & SIMON

Contractor:
COLLINS CONSTRUCTION COMPANY
Ready-mix 'Incor' Concrete:
STEWART SAND & MATERIAL COMPANY
—all of Kansas City, Mo.

Sketch below shows how The Star handles newsprint, from railroad car to storage in new warehouse, thence by conveyor under railroad tracks and tunnel under Grand Avenue to presses in main building.



LONE STAR CEMENTS COVER
THE ENTIRE CONSTRUCTION FIELD

LONE STAR CEMENT CORPORATION

Offices: ABILENE, TEX. • ALBANY, N. Y. • BETHLEHEM, PA. • BIRMINGHAM
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LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST
CEMENT PRODUCERS: 17 MODERN MILLS, 125,600,000 SACKS ANNUAL CAPACITY

The CONSTRUCTOR

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COVER

The Atomic Energy Commission's vast program, embracing some of the largest projects ever undertaken, has received added impetus with the start of another major expansion estimated to cost more than \$4 billion over a 5-year period. Two multi-million-dollar contracts were announced last month. This month's cover shows work on the country's first billion-dollar defense venture at the Savannah River plant site of the AEC near Ellington, S. C., where more than 25,000 construction workers and an estimated 6,300 equipment units are changing the face of the earth in an area covering 315 square miles. (Caterpillar Tractor Co. Photo)

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C.I.T. CORPORATION
Industrial Financing

ONE PARK AVENUE, NEW YORK 10, N. Y.

S. O. MADDOCK
PRESIDENT

August, 1952

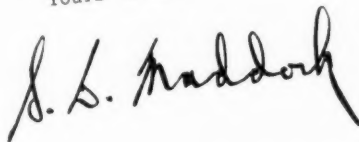
Dear Mr. Contractor:

When business is humming and contracts are plentiful, there is a strain on working capital brought on by increased business and the need for more equipment and fixed assets.

You can conserve your working capital and still secure the additional equipment you need to keep your business humming by using C.I.T. Corporation Equipment Funding Plans. Dipping into reserves to purchase needed equipment for cash reduces your scope of operations unnecessarily. When you finance your requirements through C.I.T. Corporation, the equipment pays for itself as it produces and your working capital remains available for payrolls, materials, premiums, etc.

Tell us what equipment you wish to purchase. We will be glad to work out a program for you to fit your individual requirements.

Yours truly,



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416 W. 8th St.
LOS ANGELES

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SAN FRANCISCO

Record volume of \$18 billion in new construction was posted in first 8 months of 1952, paced by big \$3.1 billion July total, indicating that long steel strike, though now settled, will have a delayed effect in later months. Departments of Commerce and Labor report. July figure topped June by 3% and July 1951 by 7%.

Relatively abundant copper and aluminum will be available for construction as result of latest National Production Authority relaxations, reversing earlier predictions that construction would be limited only by a shortage in copper. Greater amounts of these metals now may be self-authorized for most construction, and copper use is eased in making building materials.

Tightening steel situation is faced, however, by civilian users in future as Defense Production Administration channels all possible aid to military and atomic energy programs to catch up with lags caused by production loss of 20 million ingot tons. No changes to be made in current 2nd, 3rd or 4th quarter allotments for non-military use, and policy is to let outstanding tickets be absorbed gradually, with goal of bringing program into balance by end of next March. Government will try to "spread thin" initial steel production among many users. (page 21)

Fourth quarter construction allotments of steel will go to important defense industrial expansion projects even if that requires deferral of new starts in all other industrial and commercial activity, NPA said this month. Earlier, the agency released allotment figures of aluminum and copper, but postponed steel allotments. NPA now is reviewing allotment procedures for steel.

New Wage Stabilization Board took over task July 30 under drastically curtailed powers dictated by the amended Defense Production Act, with disgruntled labor members deciding to go along. The new chairman, taking over from Nathan P. Feinsinger, is Archibald Cox, Harvard law professor, who was formerly co-chairman of the Construction Industry Stabilization Commission. (page 26)

Old WSB on its last day of existence (July 29) ruled to permit continuation of "piece work" payments higher than area wage rates and recommended that the Construction Industry Stabilization Commission Regulation No. 1 be amended to permit continued piercing of the area rates for identified "key employees or especially qualified individuals." (page 25)

Jurisdictional disputes picketing was prohibited by the general presidents of the 19 international unions of the A. F. of L.'s Building and Construction Trades Department. Employers consider this "Declaration of Policy" as evidence that the union presidents are taking the lead in trying to eliminate such strikes. (page 25)

82nd Congress concluded its second session just in time to attend the political conventions. The final rush to complete work on major measures slowed down an earlier determined economy drive and resulted in uncompleted action on some important legislation. The 1953 budget totaled \$75.4 billion, \$8.6 billion less than the Administration requested. (page 32)

Building Research Advisory Board's panel of general contractors which participated in the report on conservation in the construction industry, deals chiefly with administration procedures concerning the relationship between the government, as the owner, and the general contractor. The first of a series of articles digesting the seven panel reports appears on page 38.

Tax amortization certificates for industrial facilities have been geared to the government's plant dispersion program. The Defense Production Administration announced that such applications must be accompanied by recommendations of local dispersion groups if the new plant is estimated to cost at least \$1 million or if when completed, it will produce 15% or more of the national total of the defense product involved. (page 22)

Railroad facility expansion will have been boosted by \$300 million in fast tax write-off allowances by the end of

1953. Termed an "interim expansion" program, the plan for liberal tax amortization has already distributed over \$136 million in certificates of necessity, leaving \$164 million pending. (page 23)

Federal aid to schools set aside in July totals more than \$96 million for construction projects in "federally affected" defense areas, U. S. Office of Education reported. The funds will be used to provide grants to local school districts for critically needed buildings in overcrowded boom towns. (page 39)

Modern Army hospitals, to replace old wooden structures, will be built at seven large military centers throughout the country, starting early next year. These hospitals are designed to provide for a minimum of 3,200 patients. All units are expected to be completed in the next two or three years.

Lockouts ruled illegal by National Labor Relations Board which recently handed down a decision against the actions of 35 members of an association of liquor dealers. The board claimed that the dealers acted illegally in "locking out" their 700 salesmen employees as a result of a strike against one of the members of the association. (page 27)

Fatal accidents in construction grimly followed the general industrial trend upward for the second straight year in 1951. Deaths in this portion of industry numbered 2,500 out of a total of 16,000 for industry in general. Construction workers also had more accidents but the ones they had were less severe, the National Safety Council reports. (page 56)

Atomic Energy contracts totaling \$915 million were awarded to the Maxon Construction Co., Inc., of Dayton and the F. H. McGraw Co. of Hartford. The Maxon Co. has a \$164 million addition to Oak Ridge and the McGraw Co. the contract on a \$459 million addition to the uranium-235 separation plant at Paducah, Ky.

Storm sewer construction in winter weather

**Three contractors
team up "Caterpillar"
equipment to push
through Denver job**

For a new housing development near the Denver, Colorado, Airport, two miles of deep storm sewer had to be laid during the coldest months of the past winter. Three contractors, Horn's Crane Service, Thomas Bate & Sons and C. L. Hubner Co., all of Denver, had the job. Pooling their equipment they completed the contract on schedule in spite of severe frost conditions, caving sand and high winds.

The trench was 20 feet deep, and wide enough for 72-inch lock-joint concrete pipe. It was dug by a Bucyrus-Erie Model 3SB backhoe with 1 $\frac{3}{4}$ -yard bucket and a Manitowoc Speedcrane dragline, also with 1 $\frac{3}{4}$ -yard capacity.



A "Caterpillar" Diesel D8 Tractor and No. 88 Dozer, owned by C. L. Hubner Co., backfills the trench after sewer pipe is laid.

Each machine was powered by a "Cat" Diesel D15000 Engine. The backhoe was used for roughing out, while the dragline finished the trench. Another Speedcrane handled the pipe.



This photo, taken in January, 1952, shows teamwork between the Bucyrus-Erie backhoe, owned by Horn's Crane Service, and the Manitowoc Speedcrane, owned by Thomas Bate & Sons. Both units are powered by "Cat" D13000 Engines.

When it came to backfilling the trench, a "Caterpillar" Diesel D8 Tractor with a No. 88 Bulldozer did the job.

No profit in down-time

Experienced construction men know that to make money on a contract they have to keep their equipment working. Down-time for service or repairs boosts costs and cuts profit. Especially where conditions are difficult, dependable machinery pays off.

Standardizing on "Caterpillar"-pow-

ered equipment is one way to assure steady production. Every "Cat" Engine is built to deliver its full rated horsepower, and its simplicity of design contributes to long, reliable work life. Backing it up is the efficient service of a thoroughly equipped dealer organization. The "Caterpillar" line includes twelve engine sizes, ranging from 52 to 500 HP, available for original or replacement use in practically every type of excavating and earthmoving equipment. It will pay you to get the full story from your "Caterpillar" Dealer.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

A Series of Graphs Outlining the Construction Trend

Compiled by The Associated General Contractors of America

TREND OF CONSTRUCTION COSTS

The average of construction costs in the principal construction centers of the United States for July stands at Index Number 391, according to the A.G.C. Index. The cost figure for July 1951 was 379. The 1913 average equals 100.

WAGE AND MATERIAL PRICE TRENDS

The average of wages in the principal construction centers of the United States stands at 512 for July. One year ago the average stood at 506. The average prices paid by contractors for basic construction materials for July stand at Index

Number 291. The average a year ago stood at 295. The 1913 average, again, equals 100.

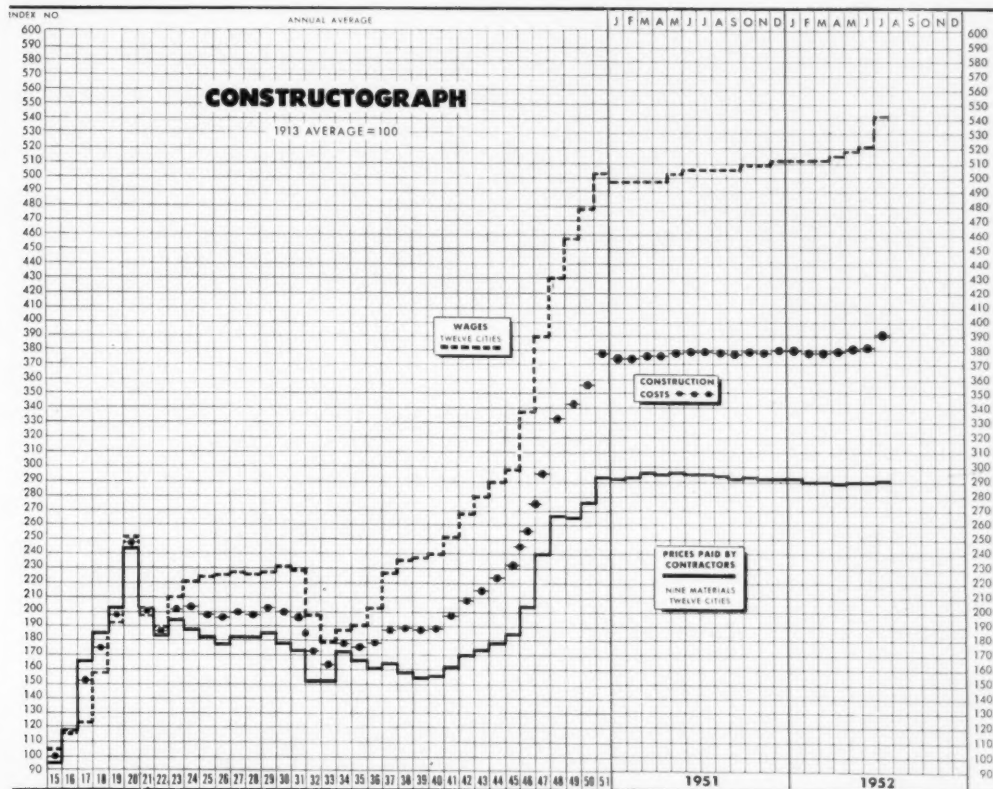
CONTRACT AWARDS IN 37 STATES

The volume of contracts awarded during June (Index Number 296, based on 1936-1938) is a decrease of 22 points from May and an increase of 14 points from June 1951.

REVENUE FREIGHT LOADINGS

Revenue freight loaded during the first 29 weeks of 1952 totaled 20,164,857 cars. For the same period in 1951, loadings amounted to 22,091,158 cars. This represents a decrease of 8.7%.

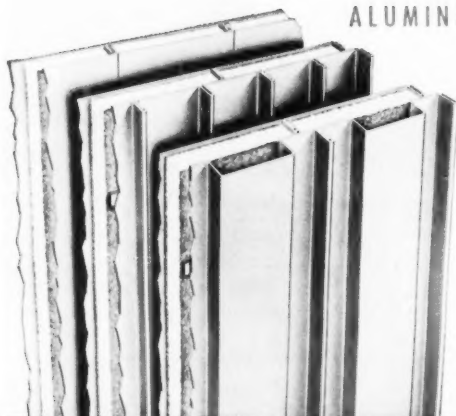
● Wage, Material Price and Construction Cost Trends



INSULATED

METAL WALLS

for INDUSTRIAL and COMMERCIAL BUILDINGS
ALUMINUM, STAINLESS or GALVANIZED STEEL



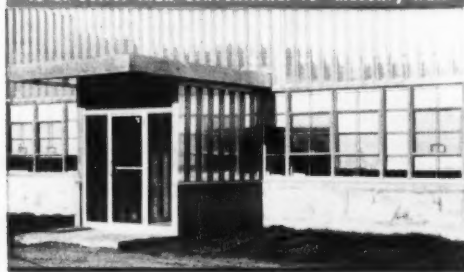
FLUSH, RIBBED, or FLUTED
Over-all "U" Factor of Various Types is Equivalent
to or Better than Conventional 16" Masonry Wall

In new plant planning, this modern wall construction continues to gain favor with both architects and owners throughout the country. As evidence of this, we point to a second complete new plant built for Quaker Oats in Chattanooga, Tenn. The first Quaker Oats plant built with this wall construction was completed last year in Omaha, Neb. In the two plants, Mahon Insulated Metal Walls with aluminum exteriors were employed to good advantage in the construction of eleven separate buildings. Mahon Insulated Metal Walls can be furnished in Aluminum, Stainless or Galvanized Steel in the three distinct exterior patterns illustrated at the left . . . they are available in two "Field Constructed" types, and in two types of "Prefabricated Panels". Walls of the "Field Constructed" type can be erected up to fifty feet in height without horizontal joints—a feature of Mahon walls which is particularly desirable in power houses or other buildings where high expanses of unbroken wall surface are common. Mahon Insulated Metal Walls go up quickly, resulting in considerable saving in time and construction costs. For complete information on this modern, permanent wall construction, and Mahon Steel Deck Roofs, see Sweet's Files, or write for Catalogs No. B-52-A and B.

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Detroit 34, Mich. • Chicago 4, Ill. • Representatives in All Principal Cities

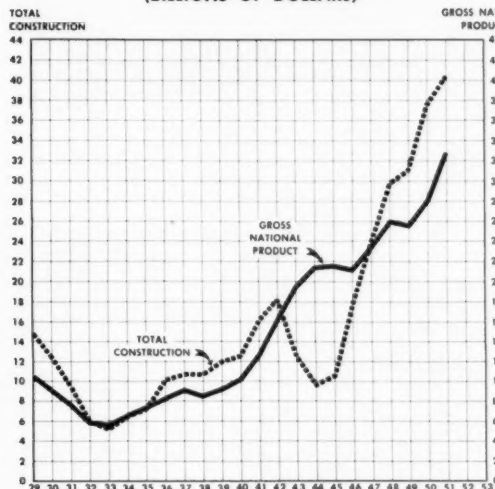
Manufacturers of Insulated Metal Walls; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms; Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.



Mahon Insulated Metal Walls and Mahon Steel Deck Roofs employed in the construction of a complete new plant for Quaker Oats Company, Chattanooga, Tenn. Johnson & Johnson, Chicago, Ill. Architects & Engineers; John Martin Company, Chattanooga, Tenn. General Contractors.

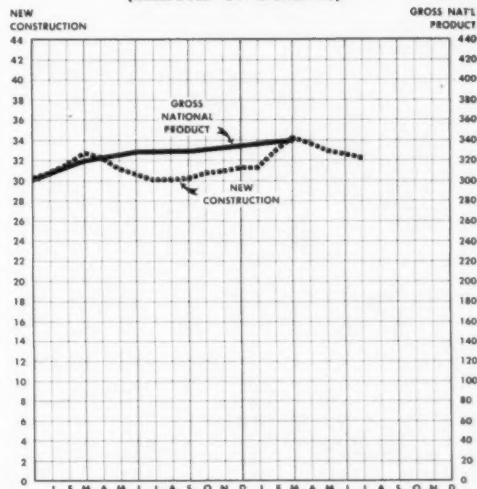
MAHON

TOTAL Construction compared with Gross National Product (BILLIONS OF DOLLARS)



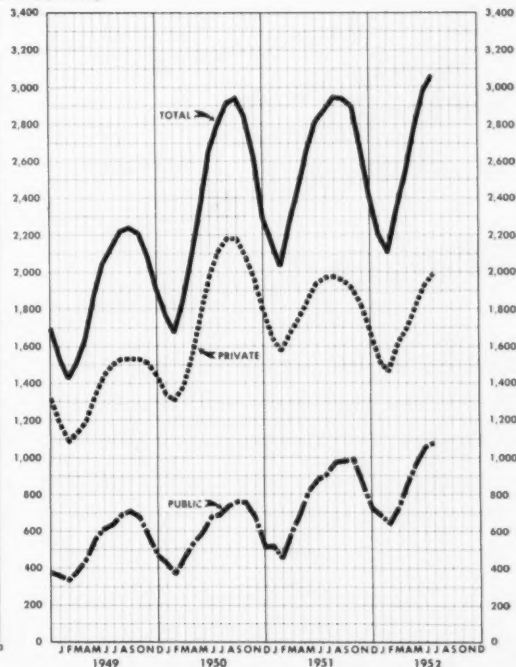
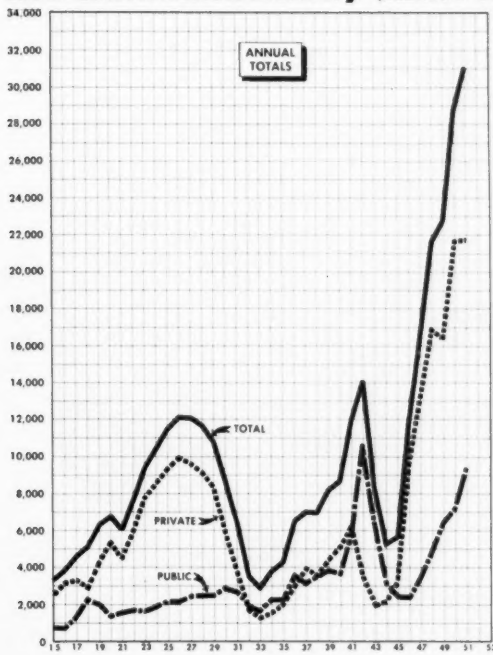
DATA SUPPLIED BY DEPT. OF COMMERCE

NEW Construction compared with Gross National Product* (BILLIONS OF DOLLARS)

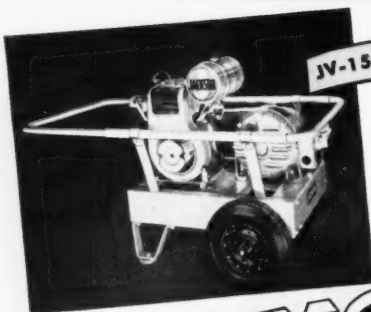


* Seasonally adjusted at an annual rate

New Construction Activity (MILLIONS OF DOLLARS)



DATA SUPPLIED BY DEPTS. OF COMMERCE AND LABOR



JV-1500

MODEL JV-1500: 1.5 KVA; 10 amps, single-phase, 7 1/2 amps per phase in 3-phase current; 5.4 HP engine; welded steel rectangular base with wrap-around telescoping handle. Weight: 280 lbs.



JV-2500

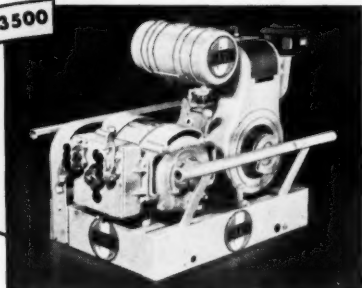
MODEL JV-2500: 2.5 KVA; 18 amps, single-phase, 12.5 amps per phase in 3-phase current; 7.3 HP engine; welded steel rectangular base with wrap-around telescoping handle. Weight: 350 lbs.

JACKSON PORTABLE POWER PLANTS

CAPACITIES FROM 1.5 to 7.5 KVA

Featuring

**PERMANENT
MAGNET GENERATORS**
which require no adjustment or maintenance
**3-PHASE and SINGLE-PHASE
ALTERNATING CURRENT**
whichever you want when you want it.
**HIGHEST QUALITY - RUGGEDNESS -
SIMPLICITY - FLEXIBILITY**



JV-3500

MODEL JV-3500: 3.5 KVA; 22 amps, single-phase, 17.5 amps per phase in 3-phase current; 7.3 HP engine; welded steel rectangular skid base with tubular handles. Weight: 360 lbs. Also available wheel or trailer mounted.



**JV-5000
JV-7500**

MODEL JV-5000: 5.0 KVA; 36 amps, single-phase, 25 amps per phase in 3-phase current; 20 HP; Skid mounted; 750 lbs.; With separate trailer unit: 1050 lbs.

MODEL JV-7500: 7.5 KVA; 40/20 amps single-phase, 36/18 amps per phase in 3-phase; crank or electric starter; 23 HP; weight skid mounted: 1050 lbs.; with trailer: 1350 lbs.

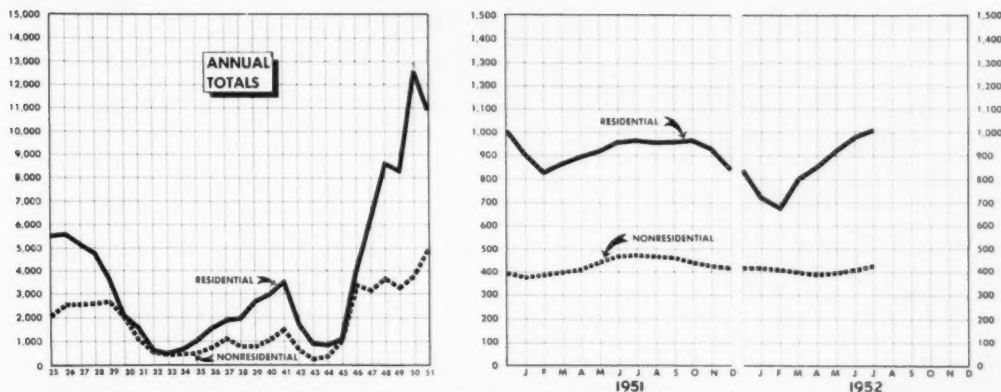
IDEAL FOR: Operating all JACKSON Electric Concrete Vibrators, Screeds, Asphalt and Granular Soil Compactors, a wide range of contractors' power tools and lights. See these outstanding Portable Power Plants or write for complete details.

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LUDINGTON MICHIGAN

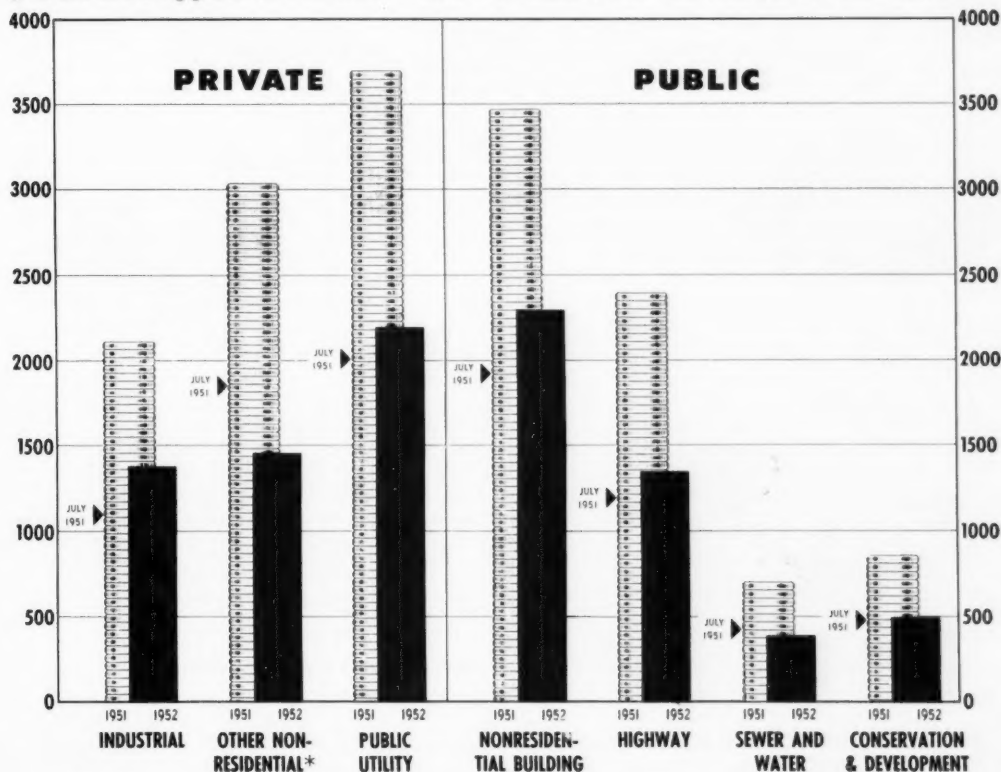
NEW CONSTRUCTION ACTIVITY

● Private Residential and Nonresidential Building* (MILLIONS OF DOLLARS)



* Residential excludes farm; Nonresidential includes industrial, commercial, institutional, and social and recreational building, but excludes public utility building.

● Selected Types: (CUMULATIVE, MILLIONS OF DOLLARS) 1951 and 1952 VOLUME THROUGH JULY



* Includes commercial, institutional, and social and recreational building

Men who depend
on power...know
they can depend
on **CUMMINS®**



Every **CUMMINS DIESEL** is built not once but twice



Construction men in the field have learned to count on Cummins Diesels for dependable power day in, day out.

What's behind this consistent reliability? One good reason is the fact that every Cummins Diesel is actually built *twice*. After initial assembly, and run-in testing, every engine is disassembled, inspected; then reassembled and tested again.

This extra care—together with Cummins' economy-proved fuel system and efficient parts and service organization—makes lightweight, high-speed (50-550 h.p.) Cummins Diesels a wise first choice for men who depend on power.

Whatever your power needs . . . whether it's for earthmoving, portable power units or generator sets . . . or any other important jobs . . . your Cummins dealer is the man to see.

CUMMINS ENGINE COMPANY, INC., Columbus, Indiana

Export: Cummins Diesel Export Corporation
Columbus, Indiana, U.S.A. • Cable: CUMDIEX

(10-40)



TRADEMARK REG. U. S. PAT. OFF.

Leaders in lightweight, high-speed diesel power!

For Moderate Income Families in Large Cities

(Formerly referred to as the "Cost of Living Index," compiled by the Bureau of Labor Statistics)

This table indicates the average changes in retail prices of selected goods, rents and services bought by the average family of moderate income from April 15, 1950 to June 15, 1952.

They are presented here for use by employers who may wish to take these cost of living data into consideration when contemplating adjustments of wages based on increased living costs.

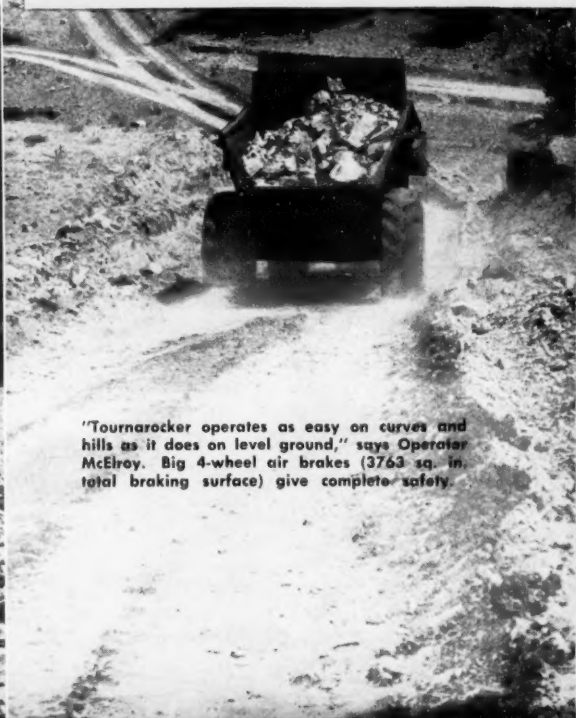
The Bureau of Labor Statistics surveys 10 key cities every month and 24 other large cities quarterly. Prices are obtained on food, fuel, apparel, house furnishings and miscellaneous goods and services. Rental information is obtained quarterly only for all cities. The computations are based on the indexes for the years 1933-39, which are taken as the average of 100 points.

	1950			1951			1952		
	APR. 15	MAY 15	JUNE 15	APR. 15	MAY 15	JUNE 15	APR. 15	MAY 15	JUNE 15
Average.....	167.3	168.6	.....	184.6	185.4	185.2	188.7	189.0	189.6
Birmingham, Ala.....	167.7	169.0	171.1	189.9	190.1	189.8	193.3	194.2	194.5
Mobile, Ala.....	.....	.....	167.4	.....	.....	183.5	.....	.....	188.4
Los Angeles, Calif.....	166.9	166.7	166.7	185.6	186.3	186.1	191.5	191.3	191.9
San Francisco, Calif.....	.....	.....	173.1	.....	.....	188.4	.....	.....	196.3
Denver, Colo.....	165.7	.....	.....	187.0	.....	.....	191.1	.....	.....
Washington, D. C.....	.....	165.2	.....	.....	180.0	.....	.....	184.9	.....
Jacksonville, Fla.....	.....	.....	176.7	.....	.....	190.6	.....	.....	198.2
Atlanta, Ga.....	.....	169.3	.....	.....	192.7	.....	.....	194.4	.....
Savannah, Ga.....	170.9	.....	.....	195.5	.....	.....	199.6	.....	.....
Chicago, Ill.....	172.9	175.3	176.4	189.1	189.8	190.1	193.1	194.7	195.6
Indianapolis, Ind.....	170.9	.....	.....	187.7	.....	.....	189.8	.....	.....
New Orleans, La.....	.....	171.5	.....	.....	188.5	.....	.....	190.1	.....
Portland, Me.....	.....	.....	164.5	.....	.....	176.4	.....	.....	182.3
Baltimore, Md.....	.....	.....	174.3	.....	.....	189.8	.....	.....	194.2
Boston, Mass.....	162.3	163.3	166.2	175.5	176.1	176.5	178.9	179.9	180.4
Detroit, Mich.....	169.5	171.4	174.2	186.7	187.4	188.3	191.7	191.8	192.3
Minneapolis, Minn.....	.....	.....	169.2	.....	.....	183.6	.....	.....	190.3
Kansas City, Mo.....	161.1	.....	.....	178.5	.....	.....	183.3	.....	.....
St. Louis, Mo.....	.....	.....	169.7	.....	.....	185.0	.....	.....	192.7
Manchester, N. H.....	167.1	.....	.....	182.9	.....	.....	187.0	.....	.....
Buffalo, N. Y.....	166.3	.....	.....	183.3	.....	.....	188.8	.....	.....
New York, N. Y.....	164.5	165.4	167.0	180.6	181.4	180.5	183.5	183.2	183.6
Cincinnati, Ohio.....	167.3	169.7	171.2	184.6	184.8	185.0	188.4	189.4	190.1
Cleveland, Ohio.....	.....	170.1	.....	.....	188.2	.....	.....	192.7	.....
Portland, Ore.....	174.8	.....	.....	194.1	.....	.....	198.6	.....	.....
Philadelphia, Pa.....	166.0	167.1	169.7	185.9	186.4	185.6	188.2	188.3	189.1
Pittsburgh, Pa.....	170.1	172.0	173.4	186.7	187.8	187.8	190.9	191.1	190.8
Scranton, Pa.....	.....	167.3	.....	.....	182.4	.....	.....	186.3	.....
Memphis, Tenn.....	.....	.....	169.9	.....	.....	187.8	.....	.....	191.2
Houston, Tex.....	171.9	172.4	173.1	192.5	192.0	192.3	194.7	194.3	194.6
Norfolk, Va.....	.....	170.9	.....	.....	188.3	.....	.....	192.9	.....
Richmond, Va.....	161.9	.....	.....	181.2	.....	.....	184.5	.....	.....
Seattle, Wash.....	.....	171.8	.....	.....	191.4	.....	.....	195.8	.....
Milwaukee, Wis.....	.....	170.9	.....	.....	190.9	.....	.....	198.1	.....

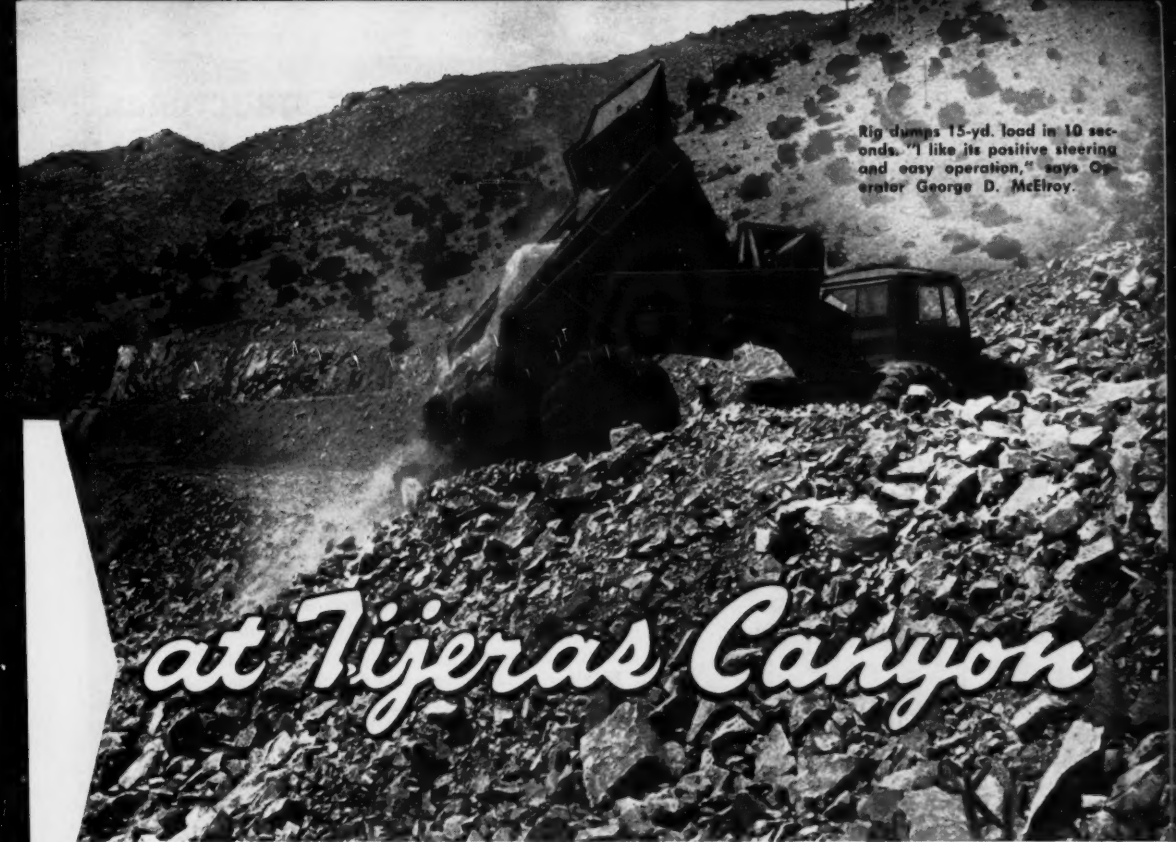


Tournarocker is loaded with 15 pay yards of granite in 3 minutes. Big square bowl, low loading height, gives shovel operator an easy-to-hit target... lets him load faster with shorter swings, less spillage.

135 yards of granite hourly



"Tournarocker operates as easy on curves and hills as it does on level ground," says Operator McElroy. Big 4-wheel air brakes (3763 sq. in. total braking surface) give complete safety.



Rig dumps 15-yd. load in 10 seconds. "I like its positive steering and easy operation," says Operator George D. McElroy.

at Tijeras Canyon

Skousen-Hise Tournarocker hauls up 10 to 15% grades

When Skousen-Hise Contracting Co., Albuquerque, New Mexico, started building a new 4-lane route for U.S. 66 through the Sandia Mountains, 6 miles east of Albuquerque, the job called for a fast, maneuverable rear-dump hauler for work in restricted quarters. After careful consideration of available machines, the company decided on a 16-ton 35 m.p.h. C Tournarocker—a rig which has a turning radius of only 13'9". Roading the electric-control "Rocker" through traffic at Tijeras Canyon, Skousen-Hise got the following profitable production on the 1,000,000-yd. project.

2400' cycle every 6 minutes

With sideboards to increase capacity, C Roadster was loaded with approximately 15 pay yards of blasted, partially decomposed granite in 9 passes of a 1¾-yd. shovel. In spite of occasional delays which boosted average load time to 3 minutes, rig completed a 2400' cycle every 6 minutes... made 9 trips, delivered 135 pay yards per

hour. Haul to fill included 240' of 15% downgrade, 100' of 10% adverse grade. Haul speed averaged 11 m.p.h.

"Can't beat Tournarocker" says Superintendent Isbell

With 2500 hours on the machine, owners are very satisfied with Tournarocker's performance. 100 days ahead of a 400-day schedule because of good weather and high production, Job Superintendent Andy Isbell says, "For maneuvering around in rocks and tight places, you can't beat the Tournarocker."

Check other job reports

Whenever you have dirt or rock to move, it will pay you to check the high output and low costs other contractors are getting with LeTourneau rear-dumps, bottom-dumps, and Carryall Scrapers. See your LeTourneau Distributor for job-proved facts and figures on work like yours.

Tournarocker Carryall—Trademark Reg. U. S. Pat. Off. R-459

R.G. LeTOURNEAU, INC.
Peoria, Illinois



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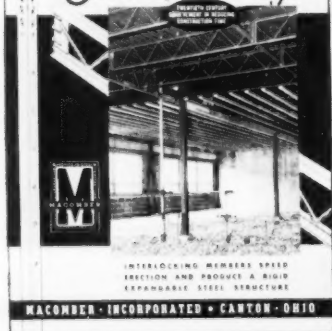
WHAT IS V-LOK?

**WHAT STRUCTURAL
ADVANTAGES HAS
V-LOK FRAMING?**

**INTERLOCKING MEMBERS SPEED
ERECTION AND PRODUCE A RIGID
EXPANDABLE STEEL STRUCTURE**

**TWENTIETH CENTURY
ACHIEVEMENT IN REDUCING
CONSTRUCTION TIME**

**MACOMBER V-LOK
Steel Framing**



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The Macomber V-LOK Building is not a standardized steel building. It is a custom designed structural system using standardized parts. The building is then completed with conventional materials to carry out any occupancy need or architectural effect.

For many types of buildings, V-LOK is a practical method of steel framing designed to reduce building costs in a rapidly rising market.

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There is no more economical approach to carefully engineered steel construction as a result of these basic economies designed into every square foot of V-LOK Steel Buildings.

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STANDARDIZED STEEL BUILDING PRODUCTS

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V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK

Sidelights for Contractors

By John C. Hayes, Counsel

Taxes

Depreciation.—The Internal Revenue Code has been amended to provide that the basis of property shall be reduced by the amount of depreciation allowable, or by the amount of depreciation previously allowed if that was more than the amount allowable but only when the deduction of the excess amount reduced income or excess profits taxes in any year. This remedies the hardship of the Supreme Court's decision of some years ago which required a taxpayer claiming excessive depreciation in past years to reduce his remaining basis by the total amount of depreciation claimed although it had resulted in no tax benefit.

Charitable Contributions.—Under another amendment of the Internal Revenue Code, the limitation on charitable contribution deductions allowed individuals has been increased from the former maximum of 15% to a present 20% of adjusted gross income.

Lease With Purchase Option.—On the question of the deductibility for income tax purposes by a lessee of alleged rental payments for equipment under a rental agreement with option to purchase, a Circuit Court of Appeals has disagreed with the Tax Court's purely objective, economic test that such payments are non-deductible capital expenditures if the option price is less than the value of the property. The true test, in the opinion of the higher court, is whether the parties in good faith actually intended to enter into a lease contract. Under all the facts of the case before it, the court concluded that the periodic payments were deductible as rentals, where the option terms were not unreasonable when made although less than the value of the equipment at that time or when exercised.

Excess Profits Tax.—A corporation, for purposes of computing its excess profits tax for its 1943 and 1944 fiscal years, was not permitted by a Circuit Court of Appeals to use the base period income experience of a

three-member partnership in existence during that time but which subsequently was replaced by a two-member partnership on the withdrawal of one partner shortly after the base period and prior to organization of the taxpayer corporation. Since the original partnership terminated on withdrawal of one member, there was no component of the taxpayer in operation during the base years.

Deferred Compensation.—Where two insurance agents, who were on the cash basis of accounting, at the time of their retirement in 1941 elected to spread the term of payment of their renewal commissions over a period of 15 years instead of the 9 year period as provided under their old contract, and no amount was due them thereon at the time of their retirement, the Tax Court held that the agents could be taxed only on the amounts actually received in the taxable years 1944-1946 rather than on the larger amounts credited to their accounts but which they were not entitled to receive until the future.

Reasonable Salaries.—The Tax Court allowed a corporation to deduct the full amount of salaries paid its president and vice president, although higher than those paid by its competitors, where it was shown that the managerial skill of these officers had enabled the corporation to earn a higher rate of profit than its competitors and that these officers had owned less than 3% of the corporate stock and thus had not been in a position to distribute the profits to themselves as deductible salaries.

Profit Sharing Plan.—An amendment made by an employer in its profit sharing plan for its employees whereby it reduced its contribution to 10% of profits in 1946 from the 35% of profits contributed in 1943, 1944, and 1945, did not change the exempt character of the trust, the Tax Court concluded, and the contributions under the new formula continued to be deductible. The court was of the opinion that no harm or violation of the intent of Congress appears in reason-

able changes in the formula for employer contributions made as conditions change.

Public Contracts

Renegotiation.—A bulletin issued by the Renegotiation Board points out that entertainment expenses are allowable deductions in renegotiation only if properly allowable for tax purposes and if properly allocable to renegotiable business. Entertainment of or gratuities to persons acting on behalf of the government are expressly disallowed.

Price Relief.—The Comptroller General has ruled that acceptance of final payment by an army contractor does not preclude the Defense Department from granting a price adjustment to the contractor, under section 201 of the First War Powers Act, in response to a request for relief filed prior to the contract's completion.

Lucas Act.—A war contractor's failure to disclose that he had been awarded and had performed twenty other war contracts was fatal to his suit under the Lucas Act to recover losses suffered on three war contracts. In so holding, a District Court pointed out that such claims for relief are based upon equitable considerations and that the statute and an executive order thereunder clearly require the inclusion of all contracts in the claim filed.

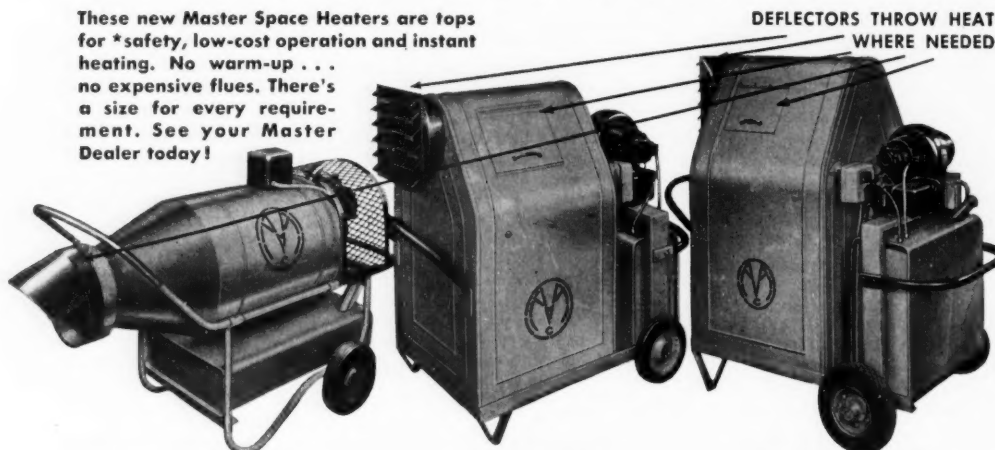
Government's Delay.—The Court of Claims decided that a contractor's petition stated a claim upon which relief could be granted where it was alleged that the United States had agreed to provide the necessary land and rights of way without cost to the contractor for the construction of channel improvements by the latter but where a forcible work stoppage of thirty-nine days was suffered by the contractor due to the vigorous resistance of a landowner to appropriation of his land, as known to the government prior to execution of the contract but not communicated to the contractor.

3 New

SUPER SPACE HEATERS designed for your job

Give you *Fast Safe Heat*
for Drying, Thawing, Preheating,
Spot Heating, Space Heating and many other uses.

These new Master Space Heaters are tops for *safety, low-cost operation and instant heating. No warm-up . . . no expensive flues. There's a size for every requirement. See your Master Dealer today!



New Master B-140 high output for smaller heating jobs.

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New Master H-350 to meet large heating output requirements.

NEW MASTER SPACE HEATER SPECIFICATIONS

MODEL NO.	CAPACITY	*SAFETY	BURNER	FUEL	FUEL CONSUMPTION	HOT AIR OUTPUT	CONTROLS	SIZE	WEIGHT
B-140	140,000 BTU per hour	Indications of carbon monoxide in the exhaust gases of the kerosene fueled Master Space Heater was less than 0.001 per cent by volume . . . as tested by an independent testing laboratory. According to accepted standards this content is one tenth of the amount considered hazardous.	Approved by Underwriters' Laboratory	Kerosene, No. 1 Fuel Oil or No. 2 Fuel Oil	1 gal. per hr.	800 C.F.M.	Fuel tank and burner safety control, solenoid pump control, thermostat control available extra.	W-24 1/2" L-58" H-34"	145 lbs. less fuel
H-231	241,000 BTU per hour				1.65 gal. per hr.	1500 C.F.M.	Thermostat for full automatic temperature control. Fuel tank and burner safety control. Over-heat safety control.	W-29 3/4" L-51 1/4" H-43 1/2"	295 lbs. less fuel
H-350	350,000 BTU per hour				2.5 gal. per hr.	2500 C.F.M.		W-31 1/2" L-58" H-58"	360 lbs. less fuel

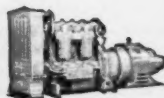
MASTER

BETTER PRODUCTS FOR BIGGER PROFITS

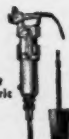
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Legislation Is the Cure

THE FIGHT of the general contracting industry to obtain equitable treatment in the handling of disputes arising under government contracts dates back more than 25 years.

S. 2487, which died in the last session of the Eighty-second Congress, would have rectified this situation by conferring upon contractors the right of judicial review of such disputes arising under federal contracts.

While this Congress unfortunately did not complete action on this important measure, its passage without objection by the Senate lends strength to the prospects that it will be enacted by the next Congress. (Page 31)

The need for this legislation was brought to a head by the United States Supreme Court's decision of last November in a case resulting from a dispute between the Wunderlich Contracting Co. of Omaha and the Bureau of Reclamation over the amount of adjustments under a change order. Despite the Court of Claims' finding that the department's action was "arbitrary," "capricious," and "grossly erroneous," the Supreme Court's decision appeared so positive as to prohibit administrative or judicial remedy, leaving only a legislative remedy.

This ruling interpreted Article 15 (the "disputes clause") of the standard form of government construction contract to mean that the determination of the department head is final, and that there can be no recourse to the courts in disputes over findings of fact unless fraud on the part of the government can be proved.

This decision has important implications for most government contracts, and in construction confirmed another hazard to contracting, leaving contractors without the possibility of judicial review of findings by government departments, no matter how the findings are reached, aside from the almost impossible issue of fraud.

Now, legal departments of some of the federal agencies, led by the General Services Administration, are working hard to arrive at a standard revision of the disputes clause in an effort to frustrate the movement for a solution by legislation.

This move for revision also stems partly from the big \$16.6 billion defense appropriation passed by the last session of Congress, which prohibits use of the funds in any contract containing Article 15 "until and unless said article is revised and amended to provide an appeal by the contractor to the Court of Claims within 90 days of the date of decision by the department concerned, authority for which appeal is hereby granted."

The present move to revise the provision can be well understood under the circumstances.

However, it is hard to reconcile the position of some federal agencies in advocating a change of the disputes clause by administrative action rather than legislative, in view of the fact that no disposition has been indicated to make such change in the past. This had been proposed many times by leaders of the construction industry who had formed a committee for such purpose.

The best prospects for a lasting cure lie in legislation.

Centennial of Engineering

ONE HUNDRED years of engineering progress will be reviewed next month during the 10-day long Centennial of Engineering in Chicago, when 35,000 engineers representing some 60 national and international engineering societies will form the greatest assembly of engineers in history.

The construction industry looks forward to this opportunity to salute engineers and to pay tribute to the American Society of Civil Engineers at the celebration of its first 100 years of service.

The abiding bond between the engineering and the contracting professions has been considered in the centennial's schedule of technical sessions. The joint session planned for the Construction Division of the A.S.C.E. and the A.G.C. is particularly appropriate because civil engineers and general contractors are members of the construction team which has done so much to make America a leading nation of the world.

In recent years there has been a steady increase in the proportion of men in executive and ownership positions in general contracting firms who are civil engineers. This indicates that the business of construction is constantly becoming more complex so that a sound engineering training is essential, and that there is constant improvement in the quality of construction men.

It is significant that the Construction Division of the A.S.C.E. has grown from its original membership of 1,615 when it was established in 1926, to more than 12,300 at this time, making it the largest division of the society. This seems to be appropriate, since construction at present is the largest single industry in the nation.

It also is noteworthy that approximately 40% of the membership of the Construction Division are owners, executives or managers of construction companies.

The joint session of the A.G.C. and the A.S.C.E. Construction Division will be held on Sept. 3, and it is anticipated that a number of A.G.C. members will want to attend while on their way to the mid-year meeting of the A.G.C. Governing and Advisory Boards at White Sulphur Springs, W. Va., on Sept. 8-9-10.

Speakers and their topics at the joint session will be:

H. E. Foreman, managing director, A.G.C., "Development of the Construction Industry and the Contract Method in the United States."

Dwight W. Winkelman, Syracuse, N. Y., A.G.C. past president, "Construction—A Growing Field for the Civil Engineer."

Lester C. Rogers, Chicago, A.G.C. director long active in labor relations, "Management-Labor Relations in the Construction Industry."

E. R. Higgins, engineer, the Surety Association of America, "The Contract Bond—an Essential to the Contractor."

A. N. Carter, manager, A.G.C. Highway Contractors' Division, "The Influence of Modern Equipment on Highway Construction."

Many other sessions will be of interest to contractors. Information may be obtained from Centennial of Engineering, 57th St. and South Shore Drive, Chicago 37, Ill.

**This A-W Grader Sure
Handles Oil Mix FAST!**

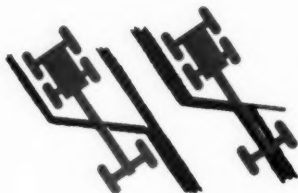


**"I take off my hat to All-Wheel
Drive and All-Wheel Steer."**

Whenever you see an Austin-Western Power Blade Grader with its rear end off-set like this, you can be sure that it is moving more material farther and doing the job faster than an ordinary motor grader could do it. We call it "CONTROLLED TRACTION." Here's how it works:

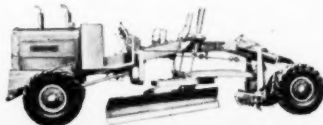
All wheels miss the windrow. The rear drivers push behind the toe of the blade; the front drivers pull ahead of the heel of the blade, and the grader moves straight ahead with a load along the entire blade that would cause an ordinary motor grader to become unmanageable.

PRECISION SIDESHIFT moves the blade in or out, as desired, while the grader is in motion. Ample throat room between top of blade and bottom of circle makes it possible to move a tremendous windrow without interference. The lay-down is handled with the precision that satisfies the most critical engineer.



On the ordinary motor grader, the operator has two alternatives; split the windrow and move less material, or straddle the windrow and not move it the full distance. Each of these procedures slows down the job.

CONTROLLED TRACTION puts the rear end of the machine where it will most effectively resist the side-thrust of the load on the blade . . . saves time and money on a wide variety of grading and ditching jobs. Only Austin-Western has CONTROLLED TRACTION . . . because only Austin-Western has All-Wheel Drive and All-Wheel Steer.



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SINCE 1839—BUILDERS OF CONSTRUCTION EQUIPMENT



» THE CONSTRUCTION industry, after posting an all-time record \$18 billion of new construction put-in-place during the first seven months of 1952, this month began enjoying relatively plentiful amounts of aluminum and copper. At the same time, industry leaders learned that the third and vital controlled material—steel—will become scarcer for all but essential military and atomic energy needs.

Thus, the delayed effects of the nation's worst steel production stoppage, though now ended, completely reversed the earlier predictions of mobilization officials that construction in the latter half of 1952 would be limited only by a shortage of copper.

The National Production Authority on August 4 greatly increased the amounts of copper and aluminum that may be self-authorized for all construction except recreational, and revoked most of its limitations on the use of these metals in construction. The agency also eased the use of copper controlled materials in making building materials.

Its actions included:

1. Amendment of CMP Regulation 6, basic construction order to—

(a) Permit self-authorization of 4,000 pounds of aluminum and 5,000 pounds of copper and copper-base alloys for industrial plants per project per quarter, compared to 2,000 pounds of each previously authorized.

(b) Permit self-certification of 500 pounds each of aluminum and copper for highways, compared to 200 pounds of each previously permitted.

(c) Permit self-authorization of 2,000 pounds of aluminum and 1,000 pounds of copper and copper-base alloys per project per quarter for all other types where self-authorization is permitted under the order, compared to previous limits of 1,000 pounds and 750 pounds, respectively. (Military or atomic energy housing and recreational projects excepted.)

(d) Permit use of copper in construction for decorative purposes and in gutters, downspouts, etc., where fabricated on the site.

The provision permitting use of aluminum for copper in electrical work was eliminated, except for recreational construction. The prohibition on other uses of aluminum is eliminated except for recreational, entertainment and amusement construction.

2. Amendment of M-100, the housing construction order, to—

(a) Permit self-authorization of

Steel Strike Throws Controls Picture Awry for Construction

- NPA Eases Limitations on Aluminum and Copper
- Emergency Steps Planned to Guard Scarce Steel

275 pounds of aluminum and 200 pounds of copper per unit for houses with steel pipe water systems compared to previous limits of 250 pounds and 50 to 110 pounds, respectively.

(b) Permit self-authorization of 275 pounds of aluminum and 400 pounds of copper for houses with copper pipe water systems, compared with previous limits of 250 pounds and 175 to 190 pounds, respectively.

(c) Permit an additional 200 pounds of copper if a forced hot water heating system is used, and 500 pounds more for radiant heating.

Section 5 limiting use of copper and aluminum was revoked, as was the provision governing substitute of aluminum for copper to conduct electricity.

All quantities are applicable without regard to starting date.

3. Amendment of Order M-77 on communications, to make self-authorizations for communications construction conform to those allowed for other types of commercial construction—5 tons of carbon steel, 1,000 pounds of copper and 2,000 pounds of aluminum.

All prohibitions on use of copper and aluminum were deleted.

4. Order M-74, limiting copper in building materials, was revoked.

Steel Control Program Set Up

Earlier, Defense Production Administrator Henry Fowler outlined plans for coping with distribution of steel following a production loss of nearly 20 million ingot tons.

General principles will be to (a) take steps to restore full-scale production for military production and atomic energy schedules which have suffered losses from the strike, and those threatened with reduced rates or shutdowns, (b) maintain validity of CMP orders on the books and allotments made before the strike to minimize confusion, assuring "fairest possible" distribution of new steel among civilian users, (c) provide "emergency rations" through warehouses and reduce inventories to assure im-

mediate availability of new steel, and (d) avoid granting additional allotments for the 4th quarter and adjust allotments for the 1st quarter downward to take into account excessive carry-over, so surplus tickets can be absorbed.

These specific steps are planned:

1. Provide a preferential delivery status for 3rd quarter and earlier military, atomic energy and machine tool orders for fulfillment by Nov. 30.

2. Establish a set-aside for 4th quarter deliveries on military orders to assure preferential deliveries, and to guard against overloading any producer with military orders and avoid "undue" hardship on other users.

3. Temporarily set new low inventory levels of 30 days for steel controlled materials to spread initial production as widely as possible.

4. Increase amounts of certain types of steel as emergency rations for many small users and those larger users to whom small lots make the difference between shutdown and continued operation. This order will also reduce quantities a warehouse can supply a given purchaser in a given week, spreading use of steel. Twelve types of steel used particularly by military and AEC contractors must be held 15 days for military orders.

5. Give preferential status to Class A and B steel products ordered for delivery through Dec. 31 in support of military, AEC and machine tool need.

For steel to be available for non-military use, NPA-DPA will make no change in current 2nd, 3rd or 4th quarter allotments, make no change in rules providing for priority treatment of carry-over orders, make 1st quarter allotments on a level to bring supply and demand in terms of outstanding allotment authority "into approximate balance by the end of March 1953," and authorize consumers to place, and steel producers to accept and schedule for delivery through November the 3rd quarter allotment tickets for all programs which now are unplaced. Similarly, 4th quarter tickets can be placed and accepted through February 1953.

Tax Benefits Now Tied to Dispersal Policy

• Permits Based on Recommendations of Local Defense Groups

» **QUALIFICATION** for rapid tax amortization of industrial facilities has been geared to the government's plant dispersion program.

Early last month the Defense Production Administration announced that applications for certificates of necessity for building new defense plants must be accompanied with recommendations of local dispersion groups.

The new ruling affects applications if the new plant is estimated to cost \$1 million or more or if the facility, when completed, will produce 15% or more of the national total of the defense product involved.

Local Groups to Judge

There are more than 60 dispersion groups organized in the major industrial areas of the country which will rule on the desirability of new plant locations. These organized groups, made up of representatives of industry working with other defense groups, will be charged with making necessary preliminary studies and recommendations concerning the potential "target security" or vulnerability of the proposed plants.

DPA has issued a new form, Appendix B, to be filled out with the standard application form, DPAF-2, for certificates of necessity. The new form will require the applicant to give in detail the precise location of the proposed facility and to identify it on a map to the satisfaction of the dispersion group.

In the event such a map is not available or a dispersion group has not been formed the applicant must attach a map showing the proposed new plant site as the center of a 10-mile circle, including within it all the population centers and industrial areas.

Criteria of Dispersal

Other criteria to determine the location of a new plant have been set forth by the National Security Resources Board in its "Industrial Dispersion Guidebook." They are as follows:

1. "Industrial development areas should be 10 to 20 miles from any densely populated or highly industrialized section of an urban area. However, this dispersal distance may be less when additional protection is

provided by rugged topography or protective construction.

2. "These areas should be 10 to 20 miles from prime targets like major military installations.

3. "They should be a sufficient distance from one another to avoid clusters, creating new targets.

4. "They should be limited in size to avoid concentrations which would create new targets.

5. "The sites, desirably, should be served by more than one transportation facility to insure continued production and distribution.

6. "The sites, desirably, should be on power and other utility grids to permit alternate sources."

Henry H. Fowler, DPA administrator, said that the agency is fully aware of the economic aspects involved, and realizes every case cannot be determined by such restrictions. For this reason each case of tax amortization for a new facility must be considered on an individual basis. In those cases that cannot be determined by dispersion criteria the DPA will consider the applicant's detailed reasons for granting the certificate, he added.

Used Machinery Prices

Used construction machinery dealers may now pass on to buyers the cost of shipping the used items from the factory to their present location, the government ruled June 30th.

In the past, this portion of the "delivered cost" could not be included in the base price. Price officials now admit that this cost "has customarily been a factor in establishing the value of used machinery." Except for this, they add, price rules remain the same.

The other important changes in Ceiling Price Regulation 105 call for:

1) "Specific provisions" to let dealers get higher prices for factory rebuilt and guaranteed machines.

2) Revision of the regulation covering the sale of machinery purchased but never used. The price of such a commodity will depend upon its condition.

3) A change in the provision regarding the dismantling and loading costs to make them conform more closely to industry prices.

REA Reorganizes Functions

A recent reorganization of the Rural Electrification Administration should reduce the backlog of telephone loans, thus increasing construction for this type of borrowers.

Initiated July 1, beginning of the new fiscal year, the streamlining of the agency is designed to give better service to all borrowers and less assistance to those best able to provide it themselves.

One agency official said that the change would mean a "substantial" increase in telephone construction, since more loans will be processed now than in the past. Also, the government will be able to work out construction plans with borrowers at a faster rate now that there are 100 more employees to do the work.

\$135 Million Appropriated

The reorganization was also prompted by a reduced budget and a shift in the ratio between electrification and telephone loans. Total loans in fiscal year 1952 amounted to \$207 million as compared with \$135 million appropriated for the agency this year by Congress.

Administrator Claude R. Wickard stressed that there would be no change in policy. Policy Bulletin No. 1 states:

1) "That each borrower is an entirely independent . . . body . . . responsible for the management of its own affairs . . . and repayment of the REA loan.

2) "That the relationship between REA and borrower is basically that of lender and borrower.

3) "That, as borrowers gain in experience and maturity . . . the advice and assistance rendered by REA shall progressively diminish."

Under the new plan, four new divisions will replace the complex REA administrative setup of contact through representatives of several divisions. They are the telephone loan and telephone engineering division, the electric distribution program and the power division. This streamlined setup, it is hoped, will give the borrowers a single point of contact when they do business with REA.

There will also be five electric distribution areas embracing generally the northeast, southeast, north central, southwest and western areas of the nation.

Railroad Expansion Urged

Expansion plans of the nation's railroad terminal and track facilities should be boosted by \$300 million worth of fast tax write-off allowances, the government announced recently.

Included in the program will be new facilities or additions to diesel servicing centers, spur tracks, passing tracks and extensions, centralized traffic control systems, classification yards, repair and construction shops, freight stations and terminals and dock terminal facilities.

Termed an "interim expansion" program, the plan of government aid to these facilities is scheduled to run through 1953. As of July 15, 234 certificates totaling \$136 million had been granted, leaving \$164 million in fast tax write-offs pending.

At the same time, the Defense Production Administration set other transportation expansion goals totaling \$330 million for facilities to produce military vehicles and engines, locomotives, freight cars and other railroad equipment, large, heavy duty tires and wire braided hose.

The expansion of military vehicle and wire braided hose portion of the program is slated to take \$300 million of this figure. Included will be the construction of new facilities, additions and the purchase of new equipment. Scheduled to expire in 1954, the program as of June 16 has certified 488 requests totaling \$229 million, leaving \$71 million in certificates yet to be approved.

The remaining \$30 million set aside for this transportation expansion program calls for railroad equipment such as freight cars, diesel locomotives to be completed or installed by the end of 1953.

William Muirhead, Secretary-treasurer of The Associated General Contractors of America, and A.G.C. past president, heads a special committee sponsored by the Chamber of Commerce to strengthen the Construction Industry Advisory Council and in this way improve its leadership in the industry. The idea for such a committee was presented to the council last winter by Ralph Walker, chairman, who later appointed the committee. Mr. Walker is former president of The American Institute of Architects. Serving with Mr. Muirhead will be nine other representatives of business and labor.

September Board Meeting to Be Largest

• Over 400 Expected at A.G.C. Conclave in West Virginia

» THE LARGEST mid-year meeting of its Governing and Advisory Boards in history will be held by The Associated General Contractors of America at The Greenbrier, White Sulphur Springs, W. Va., Sept. 8-10, 1952.

West Virginians and an unusually large representation of general contractors from all parts of the country will send the attendance above 400.

Hosts for the meeting are The Associated General Contractors of West Virginia, the Carolinas Branch, and the Virginia Branch.

The meeting will consider the principal problems faced by construction firms in carrying out current and future defense and civilian construction, and propose any changes needed in conditions for the industry to operate at maximum efficiency.

Subjects of Discussion

Specific subjects to be discussed will be the current and prospective construction market, which set a record for the first six months of the year; matters of contracts and specifications; the future of wage controls and labor relations; the availability of materials and governmental controls; national legislation affecting the industry; public relations; accident prevention; apprentice training; and association affairs.

The meeting will be called to order at 9:30 a.m. Monday by President Arthur S. Horner, of Denver. Following the roll call, he will make his opening statement. A report on A.G.C. activities and industry developments during the past six months will be made by Managing Director H. E. Foreman, Washington, D. C.

Sessions of the board will be held Monday, Tuesday and Wednesday mornings. On Monday afternoon there will be round table conferences on their particular problems by building, highway and airport, and heavy engineering and railroad contractors.

The board sessions will be preceded by committee meetings on Sept. 5 and 6 of the Labor, Apprenticeship, Legislative, Contract Forms and Specifications, Public Relations and Executive Committees.

On Sunday there will also be day-long meetings of the A.G.C. Secretaries' and Managers' Council.

A feature of the concluding session will be nomination by the board of the president and vice president to be elected by mail ballot during the winter and inducted into office at the close of the association's 34th annual convention to be held in Miami, Florida, in March 1953.

A program of entertainment is being provided by the host chapters. A reception is scheduled Sunday evening and a musical program Tuesday night.

Price Regulation for Steel

A new pricing regulation for fabricated structural iron and steel products was issued last month by the Office of Price Stabilization.

The ruling, covered by Ceiling Price Regulation 156, which became effective July 15, "involves no change in price levels" OPS said.

Steel products covered by this order include the structural frames of buildings, bridges and such construction projects, "and large equipment used in various industrial installations."

These products are essential to such basic industries as chemical iron and steel, petroleum and public utilities. All of the products coming under CPR 156 are said to be "tailor made" to fit the needs of the individual project and involve both shop fabrication or erection in the field.

To determine his ceiling price, a fabricator or erector must estimate his costs, on the basis of prices in effect at the time he submits the contract, and add 9/10 of the percentage mark-up for profit which he realized for a similar product during the base period July 1, 1950 to March 31, 1951.

In the past, fabricators and erectors had to use the General Ceiling Price Regulation of CPR 30 covering machinery and related manufactured goods in order to determine ceiling prices. Neither regulation fitted the particular needs of the industry, whose products and manner of operation differ somewhat from those of the machinery and manufactured products industries.

Price officials say that under the new regulation, fabricators and erectors "will realize approximately the same dollar and cents profit" as they did when there were no controls.



Perkins & Will, Architects • J. E. Lovejoy & Co., Contractors

How to borrow a sunbeam ...to better daylight schools



Borrowing a sunbeam to daylight a school is a very neat trick if you can do it.

And that's just what Perkins & Will, architects did in designing the Keokuk, Iowa High School. Ceco steel windows played a big part in this unique method of daylighting for better vision.

Functional use of daylight was achieved through window arrangement and purposeful positioning of the building. Built side by side, corridors and classrooms all have outside exposures. Classrooms face north utilizing diffused indirect north light. Corridors take the shape of window walls from floor to ceiling with a southern view and on one side open strips at the top of the inner walls of classrooms admit "borrowed light" from the corridor areas. Corridors become pleasing

sun-lit passageways strikingly different from the dark tunnels so prevalent in central corridor schools.

Ceco Architectural Projected Windows were selected because their slender muntins mean more light gets in, more view, too. They won't rot, warp, stick or swell ... provide controlled ventilation. Cost? Lowest of all installed with generous savings in maintenance.

Ceco's network of multiple offices offered a plus value. Liaison contact with the contractor J. E. Lovejoy & Co. came from Des Moines. In St. Louis windows were adapted to architectural design ... Chicago adds erection work and drawing of window detail.

Today more and more architects, contractors and engineers depend more and more on Ceco in solving their building problems.



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In construction products **CECO ENGINEERING** *makes the big difference*

» A HEARTENING advance toward solving a serious problem of jurisdictional disputes was taken last month when the 19 general presidents of the international unions affiliated with the Building and Construction Trades Department, American Federation of Labor, agreed to prohibit the picket line in jurisdictional disputes.

Adoption of this "Declaration of Policy" was considered by employers as evidence that the general presidents and the Building and Construction Trades Department itself are taking serious steps to eliminate jurisdictional work stoppages.

It was understood that the union presidents would request cooperation of the employers to use the utmost care to insure making correct original assignments of work.

The three major points in the policy announced July 15 are:

That no local union shall post a picket line for jurisdictional purposes on pain of "immediate disciplinary action" by the international president.

That no local council shall author-

Action on Jurisdictional Pickets Heartening Move by Union Heads

- Policy Declaration Cracks Down on Problem
- A.F.L. Presidents to Ask Employer Cooperation

ize or lend support to such activities, on risk of losing its charter.

That the illegal posting of such pickets should be ignored by all other unions "pending appropriate disciplinary action" against the offending union.

Text of Statement

The declaration of policy follows: "WHEREAS, it is recognized that the establishment of picket lines for purposes of objecting to the awarding of work in the building and construction trades results in jurisdictional strikes, and

"WHEREAS, such picketing and resultant strikes are in violation of the Constitution of the Building and Construction Trades Department, and

"WHEREAS, it is herewith the unanimous desire of the General Presidents, the Executive Council of the Department, and the officers of the Department, to put a stop to all such illegal picketing, we do on this 15th day of July 1952 herewith declare our policy to be as follows:

"1. That no Local Union of an affiliated International Union whose International Unions President's sig-

nature appears below shall institute or post picket lines for jurisdictional purposes. To do so will result in immediate disciplinary action by the International President of such Local Union.

"2. That no Local Building and Construction Trades Council shall authorize or lend support to any picketing for jurisdictional purposes. To do so will result in immediate steps by the Department officers to revoke the charter of such local Building and Construction Trades Council.

"3. That in event pickets are posted by any union for jurisdictional purposes it is our declared policy that all other unions are to ignore such picket line pending appropriate disciplinary action by the International President of the Local Union posting such picket line.

"4. Each International President is to forward a copy of this Declaration of Policy to all his affiliated local unions and District Councils.

"The Department officers shall forward a copy of this Declaration of Policy to local and state Building and Construction Trades Councils."

Engineer Scarcity Persists

The nation's shortage of engineers, a problem confronting the construction industry as well as other businesses, is going to get worse before it gets better.

That is the prospect as the U. S. Department of Labor sees it. The prediction is based on a comprehensive survey of young men in engineering schools taken several weeks ago. Given the number of enrollments in 1951, the experts subtracted the normal peacetime "drop-out" rate and produced the estimate that there would be about 26,000 engineering graduates this year.

The downward spiral will drop to 20,000 next year, and to 17,000 in 1954. It will not be until 1955 that a slight increase—to 19,000—can be expected. The normal demand in peacetime is 20,000 new engineers and 30,000 are needed in a mobilization period.

The decline is attributed to decreasing enrollments in engineering schools after the peak of veteran graduations in 1950.

Expanding industries and the defense mobilization have put a greater-than-normal drain upon the supply of engineers recently, at the same time the armed services were taking them.

Old WSB Weakens Concept of Area Rates

- Yet Questions Its Authority to Amend CISC Regulations

» AMONG THE old Wage Stabilization Board's final actions on its last day of existence (July 29) were a decision to permit continuance of "piece work" payments higher than area wage rates and a recommendation that the Construction Industry Stabilization Commission Regulation No. 1 be amended to permit continued piercing of the area rates for identified "key employees or especially qualified individuals."

The decision was made after meetings with home builders and others, the board said.

Questions Authority to Act

While in effect amending CISC Reg. No. 1 on the one hand with its decision on piece work, the old board

on the other hand recommended that the newly appointed WSB amend the regulation to permit a premium rate for key employees "because the present board may not have authority to amend such regulation."

At the same time, WSB appointed as an alternate member of the CISC, Joseph H. Vatterott, St. Louis, Mo., who is chairman of the National Association of Home Builders' Committee on Employer-Employee Relations.

Until the new WSB and the Economic Stabilization Administrator as well as the CISC issue interpretations on details of application of the "piece work" decision to the construction industry, employers are advised not to change present policy. There is no change yet in "key employee" status.

New WSB Begins Work With Curbed Powers

• Cox, Former Co-Chairman of C.I.S.C., Replaces Feinsinger

» A NEW Wage Stabilization Board took over the task of working for wage stabilization on July 30 under drastically curtailed powers dictated by the amended Defense Production Act, with disgruntled labor members deciding to go along.

As an outgrowth of the WSB's handling of the steel dispute, Congress abolished the original board and ordered it replaced by another tripartite body which can only recommend to the Economic Stabilization Administrator policies and regulations for the prescribing of maximum limits of compensation and advise as to interpretation or application of the policies and regulations which are issued by ESA. No jurisdiction with respect to labor disputes or any issue involved therein is permitted outside interpretation or application of such policies or regulations.

To get the new board started on schedule, the President was able to name 14 members, with two public and two industry members still to be named early this month.

New Chairman of WSB

The new chairman, taking over from Nathan P. Feinsinger, is Archibald Cox, Harvard law professor from Wayland, Mass., who had been co-chairman of the Construction Industry Stabilization Commission.

Economic Stabilizer Roger L. Putnam on July 29 issued General Order 16, giving the new WSB functions.

General Order 17, continuing wage and salary stabilization controls for nine categories of small business enterprises (eight employees or fewer), including those in the building and construction industry.

General Order 18, consolidating in a single ESA National Enforcement Commission of three public members the authority to administer tax disallowance enforcement for WSB, the Salary Stabilization Board, and the Railroad and Airline Wage Board.

The amended Defense Production Act exempted from wage and salary controls business firms employing eight or less employees, but with the provision that the President may from time to time exclude from this exemption such enterprises "on the basis of industries, types of business, occupations, or areas, if their exemption would be destabilizing . . ."

Types of small businesses that will continue under controls in addition to construction are those in which compensation of one or more employees is established on an industry, association, area, or other similar basis as contained in a master contract or identical contracts, or which follows compensation terms established in such contracts; local and over-the-road (for hire and contract) trucking operations; tool and die or pattern makers; automotive repair industry; logging, sawmill or planing mill operations; all Alaskan enterprises; plants in which it is "reasonably foreseeable" that more than eight persons will be employed; and businesses (except banks, building and loan associations and savings institutions) which derive more than 25% of their income from dividends, interest, rents or royalties.

The exempt categories will be brought under controls when their total employment exceeds 15 persons.

It was understood that the Construction Industry Stabilization Commission would continue with the same membership, with the exception of an opening to replace Mr. Cox.

New WSB Members

Members of the new WSB, with four more to be appointed, are:

Public—Mr. Cox; Paul N. Guthrie, Chapel Hill, N. C., former University of North Carolina economics professor; Thomas F. Coman, Washington, D. C., former newspaperman who was a member of the old WSB; Harold L. Enarson, member of White House Assistant John R. Steelman's staff and formerly professor of political science at Stanford University.

Industry—Malcolm L. Deniese, Grosse Pointe Park, Mich., public relations official, Ford Motor Co.; Hiram S. Hall, Denville, N. J., consultant to Bigelow Carpet Co. and member of the old board; Hoey A. Hennessy, Elizabeth, N. J., assistant to the managing director of the National Association of Manufacturers; Millard E. Stone, South Bend, Ind., director of public relations for the Bendix Aviation Corp.

Labor—Elmer E. Walker, Silver Spring, Md., vice president, International Association of Machinists; Harry C. Bates, Washington, D. C., president, A. F. of L.'s Bricklayers, Masons and Plasterers International

Union; William C. Birthright, Indianapolis, president, A. F. of L.'s Barbers' Union. All three are members of the old board; Joseph Childs, Akron, Ohio, vice president, United Rubber Workers Union, C.I.O.; Ben C. Sigal, Washington, D. C., general counsel of the International Electrical Workers, C.I.O.; and John Brophy, Washington, D. C., C.I.O. official.

New C.I.S.C. Members

The latest list of members of the Construction Industry Stabilization Commission that could be secured from the WSB is as follows:

Public—Thomas J. Kalis, Washington, D. C., co-chairman with another one to be named. Samuel E. Hill, New York City, and Duncan Campbell, Holland, Mich., are other regular public members with still one more to be appointed. Laurence E. Seibel, Washington, D. C., an alternate, is also executive director of the commission.

Industry—For general contractors, James D. Marshall, Washington, D. C., assistant managing director of The Associated General Contractors, Everett W. Dunn, Consulting Engineer of Hartley, Iowa; and J. William Wade, John Griffiths & Sons Construction Co., Chicago, alternate member. For subcontractors, H. R. Cole, Washington, D. C., Tile Contractors Association of America and William J. Cour, Washington, D. C., National Electrical Contractors Association. Joseph H. Vatterott, St. Louis, homebuilder, and W. Frank Clucas, of The Master Plumbers Association are other alternates.

Labor—Richard J. Gray, Washington, D. C., president of the Building and Construction Trades Department of the A. F. of L.; John J. Murphy, Washington, D. C., alternate, of the Bricklayers, Masons and Plasterers International Union; John W. Garvey, Washington, D. C., of the International Hodcarriers, Building and Common Laborers Unions; Thomas A. Murray, Cincinnati, of the United Brotherhood of Carpenters and Joiners of America; Daniel W. Tracy, Washington, D. C. and Francis G. Werden, Chicago, alternate, both of the International Brotherhood of Electrical Workers; Leslie L. Myers, St. Louis, alternate, of the International Association of Bridge, Structural and Ornamental Iron Workers; and Edward Carrough, Washington, D. C., alternate, International Association of Sheet Metal Workers.

» **REJECTING** a suggestion by a U. S. Court of Appeals that the right to lock out employees be recognized as a corollary of a strike, the National Labor Relations Board recently ruled that 35 members of an association of liquor dealers acted illegally in "locking out" their 700 salesmen employees as a result of a strike against one of the members of the association.

The NLRB originally ruled on this case in September of 1950 when it held that the Old Rose Distributing Co. and other employer members of a trade association had discriminated against their employee-salesmen in locking them out as a result of a strike against the Old Rose Co. for higher wages.

The case was taken to the United States Court of Appeals for the Seventh Circuit (Chicago) which affirmed the board's ruling as applied to the Old Rose Co., but remanded the case to the NLRB for further findings on the subject as to whether the other employers had intended to permanently discharge their salesmen or whether they had been temporarily laid off.

Court Suggestion Rejected

The NLRB has now ruled that all lockouts, whether temporary or permanent, whether as a result of strikes against a single member of an association or not, are presumed to be unlawful interferences with an employee's right to join a union and to be represented by it in free collective bargaining. The board said that this presumption can be rebutted only by a showing "that the employer cannot operate without a contract or, as in the *Betts Cadillac* case, without assurance that he will not be again struck." In comparing a lockout with a strike, the board said:

"In our view a temporary layoff (i.e., lockout) of the salesmen would have been unlawful, even if it were true that its purpose was to bring temporary economic pressure on the union and its members solely in order to break the bargaining impasse.

"At the outset, it must be admitted that the argument that the right of employers to lock out is a necessary corollary of the right of employees to strike, has a kind of superficial appeal, an aura of fairness. We believe, however, that more careful examination of the implications of this argument discloses its inherent defects.

"If we were to equate lockouts with strikes generally, as the Court of Ap-

NLRB Says Lockouts Presumed to Be Illegal

• Rejects Court Suggestion in Unusual Labor-Employer Theory

peals suggests at one point in its opinion, we would be forced into an untenable position.

"As a union, absent a no-strike agreement, may call a strike at any time for conduct of the employer detrimental to the interests of the employees, it would necessarily follow, under this view, that an employer may lock out his employees at any time as a retaliatory measure against any conduct of his employees, concerted or otherwise, which is detrimental to his interests. This would mean that an employer would be privileged to lock out his employees in order to defeat their organizational activities, to assist a company-dominated union, to punish them for past strike activity, to discourage them from joining a union, to force the withdrawal of bargaining demands even before an impasse is reached, or for any other reason. Thus, it is clear that we could not unqualifiedly equate lockouts with strikes without giving the employer a license to engage in conduct which the board and the courts have heretofore uniformly considered to violate the various provision of Section 8 (a) of the act.

"It may be urged, however, that, while an employer does not ordinarily have a right to lock out, such a right does come into existence once he has bargained with a union to an impasse. We believe that this position is equally untenable under Section 8 (a) (3) and 8 (a) (1) of the Act and finds no real support in Section 8 (d) (4)."

Believes Employer Has Advantage

In the light of what the board considers "the realities of industrial relations," the board made this unusual statement on the general subject of lockouts and employer-employee relationships:

"Nor can it be said that to deprive employers of their right to use the lockout as a means of enforcing their bargaining demands is to strip them of all power to cope with the power of unions to strike. It is most elementary, but it must be remembered, that while unions and employers may be compelled to bargain with respect to terms and conditions of employment, in the last analysis it is the employer, not the union, who controls the terms

and conditions of employment. Faced with an impasse which has arisen out of good faith bargaining, an employer is free to continue the existing terms of employment without any contract, or, indeed, unilaterally to institute any previously proposed changes in those terms. These courses of action are obviously not available to the union. And if the union resorts to an economic strike, the employer can lawfully meet the challenge by replacing the strikers. The fact that during its 17 years of existence the board has had so few cases involving the legality of a lockout after a bargaining impasse strike itself attests to the fact that few employers have seen the need to resort to a lockout in order to preserve a fair balance of economic power at the bargaining table. In short, we believe that even apart from the fact that the argument for preserving the right to lockout after an impasse cannot be squared with the statute, it has no sound basis in justice and equity when it is viewed in the light of the realities of industrial relations."

(*Morand Bros. Beverage Co. and Distillery, Rectifying and Wine Workers' International Union, A. F. of L.* 99 NLRB 55.)

The Davis Furniture Company Case

Just one month prior to this decision the U. S. Court of Appeals, Ninth Circuit, had remanded a similar case to the NLRB for further hearing.

In that case NLRB held that a temporary lockout by eleven members of a furniture dealers' association was illegal. The court said this finding was not supported by the evidence and pointed out that it is strongly arguable that Congress intended to permit temporary lockouts. This case is still under consideration by the NLRB. However, in the light of its opinion in the *Morand Case*, it is not expected that the board will change its position at this time. (*Albert Leonard, Davis Furniture Company v. National Labor Relations Board*, 21 Labor Cases 66,997.)

Since at least two U. S. Courts of Appeals (Ninth and Seventh) have differed with the NLRB on the subject of lockouts, it appears that the law on this question will continue to be unsettled until resolved by the United States Supreme Court.

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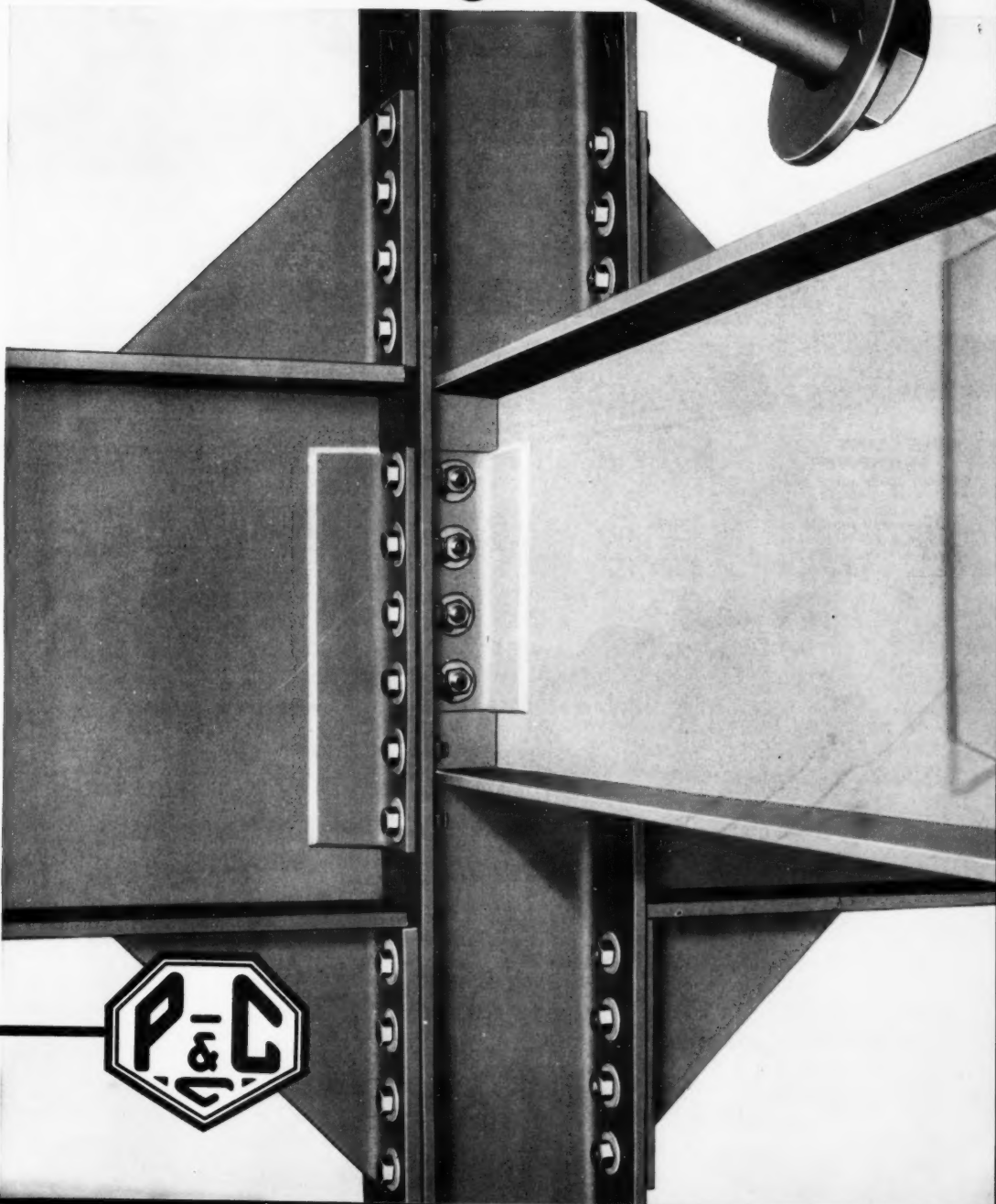
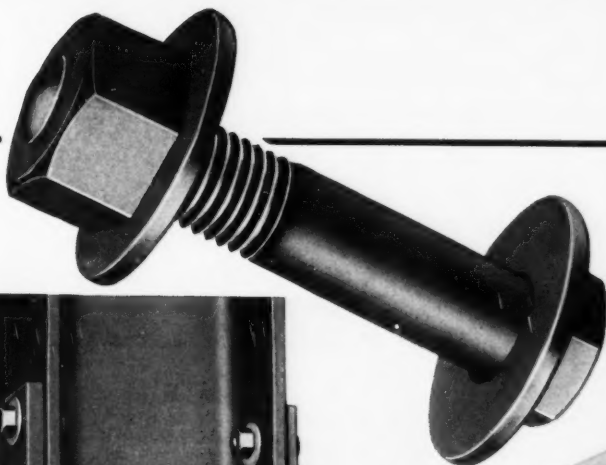
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» OF ALL THE proposed legislation that the 2nd session of the 82nd Congress failed to enact, three Senate bills held the most significance for the construction industry and would have especial effect on the operations of general contractors. These were:

S. 2487, which was advocated by The Associated General Contractors of America to offset effects of the Supreme Court's decision last November in the Wunderlich case and provide for judicial review of disputes arising under government contracts.

S. 2907, which would require general contractors to name specialty contractors and their prices in bids on federal projects. This measure, sponsored by subcontractors' organizations, was fought by the A.G.C. and government agencies.

S. 1973, which would amend the National Labor Relations Act (Taft-Hartley Law) insofar as the construction industry is concerned.

Wunderlich Bill Prospects

The A.G.C. took the leadership in seeking correction of the effects of the Wunderlich decision immediately after its announcement and was backed in its stand by large segments of industry and labor.

The Supreme Court's decision, in effect, meant that a government department head's determination of a question of fact is final in the absence of proof of fraud under provisions of Article 15 of the standard form of government construction contract No. 23.

In response to the A.G.C.'s request, Senator McCarran of Nevada and Congressman Celler of New York, chairmen, respectively, of the Senate and House Judiciary Committees, introduced bills to offset the decision, and subsequently four other bills were introduced for the same purpose.

Hearings and committee action were delayed by a heavy schedule of investigation and other legislation, but a revised S. 2487, in line with recommendations of the association, was favorably reported by the Senate committee on June 4. When brought before the Senate on June 21 on its calendar of non-controversial bills, the measure was delayed by objection of Senator Paul Douglas (D., Ill.). When the bill was passed by the Senate on July 3 after known objections had been satisfied, it was too late for action by the House.

Although the bill was approved by

Bills Significant to Construction Die in Last Session of Congress

- But Prospects Good for Wunderlich Measure
- Subcontractors' Bill, T-H Amendment Killed

a House Judiciary subcommittee, the full committee had not been able to consider it and an effort to bring it before the House under a suspension of the rules was denied.

Form 23 Revision Attempted

Meanwhile, other Congressional leaders, aware of the need for a change in the disputes clause, had placed a provision in the original \$46.6-billion defense appropriation bill that would not permit use of the funds in any contract containing Article 15. This was changed, however, in the final enacted measure to provide that no funds can be used for a contract containing Article 15 "until and unless said article is revised and amended to provide an appeal by the contractor to the Court of Claims within 90 days of the date of decision by the department concerned, authority for which appeal is hereby granted."

The legal department of the General Services Administration, which desires to resolve the question by administrative action rather than legislation, now is consulting other federal agencies on a proposed revision of the article in an attempt to thwart the drive for legislation.

General contractors, however, note that no serious move had been made by the government heretofore to reach an equitable solution of the disputes question, and the A.G.C. has announced intentions to continue pressing for the legislation in the next Congress, with prospects for enactment strengthened by Senate passage of the bill in the recent session.

The Subcontractors' Bill

Subcontractors' organizations pushed hard in this session for passage of S. 2907 or any of eight similar House bills, the requirements of which would have undermined the economy of contract construction.

The A.G.C. pointed out that the measure would increase costs, add to the administrative and legal burdens of federal agencies, hamper the general contractor in his function of un-

divided responsibility, tend to freeze the small subcontractor out of consideration, reduce competition among specialty contractors, and that better observance of good business practices and codes of ethics can be obtained without legislation.

The bill was hastily reported out near the end of the session without recommendation by the Senate Judiciary Committee, although the language of the subcommittee's report was complimentary of the bill, ignoring the subject of bid peddling, offering the measure as a cure for bid shopping, and disagreeing with governmental views that the procedure would place an added administrative burden on agencies.

Several Senators had recorded their objections to the bill and some surprise was expressed that it was reported out after the mass of testimony offered in opposition by general contractors and federal agencies.

Hearings were never held by a House Judiciary Committee on this bill or any of the House bills, nor any action taken by the full committee.

New efforts for this legislation are expected in the next session.

Taft-Hartley Amendment Dies

S. 1973, which was passed by the Senate on May 12, died in the House Education and Labor Committee, as had been expected.

It would permit building trades unions and contractors to make collective bargaining agreements before workers had been hired for a particular construction job, and by mutual consent to enter into a union security clause in the agreement.

An objectionable feature to general contractors, in addition to the shortening of time from 30 days to 7 days that a man could work under a union security agreement without maintaining union membership, was the provision in the bill permitting the union security type of agreement "despite any other provision of the act or any other federal, state or territorial law." This met serious objections from those states which have state laws prohibiting discrimination in hire.

Actions of 82nd Congress (2nd Session) Affecting Construction

THE 82ND CONGRESS concluded its 2nd session in an election year atmosphere which found the legislators hard put to finish work on major measures in time to attend the July political conventions. The final rush slowed an earlier determined economy drive and resulted in uncompleted action on some important legislation in the last-minute logjam.

From appropriations requests totaling nearly \$84 billion, however, Congress was able to cut \$8.6 billion, but with supplemental requests in prospect by next June 30. The lawmakers refused to increase taxes again, and did little to implement the Administration's Fair Deal program. But they extended a number of the government's emergency controls powers, while curtailing some, and liberalized social security benefits.

A fight with the Administration over seizure of the steel industry resulted in refusal to give the President such legislative authority and a request that he utilize the Taft-Hartley Law which he refused to do.

Of especial interest to the construction industry was the failure of Congress to enact S. 2907 which would require general contractors to name subcontractors and their prices in bids on federal projects, and S. 1973 which would amend the Taft-Hartley Law with respect to this industry. Also, the "near-miss" attempt to pass S. 2487 to permit judicial review of disputes arising from government contracts, which was passed by the Senate but left behind in the closing rush of the House.

Congress also: again buried universal military training and the St. Lawrence Seaway, extended and increased federal highway aid, extended farm price supports, increased defense area housing and education assistance, gave Korean veterans GI Bill benefits, granted more foreign aid, bolstered the merchant marine, gave federal mine inspectors more authority, rejected Alaskan and Hawaiian statehood, passed a states' rights tidelands bill which the President vetoed.

Investigations were not so numerous, but committees attacked Corps of Engineers' construction and planning, and bidding procedures of the Atomic Energy Commission. A plan that reportedly would have stripped the Corps of Engineers of its civil functions was dropped by the President in the wake of the Missouri Valley flood.

The next Congress, unless a special session is called, will convene on January 3. Actions on major legislation of particular interest to the construction industry were as follows:

Enacted Legislation

General

Defense Production Act—P. L. 429 extended amended wage-price controls until April 30, 1953; rent controls until Sept. 30, 1952 except in "critical defense areas" and areas where by local vote they could run until April 30, 1953; and allocations powers, defense production loans and other sections of the old act until June 30, 1953.

Authority for retail and voluntary credit control was terminated as of June 30. Authority for real estate credit control was extended through June 30, 1953, but housing credit control under Regulation X was hinged to production, with the President required to declare "a period of residential credit relaxation" when annual construction rate falls below 1.2 million units computed on a 3-month basis, during which time not more than 5% down payment could be required.

Old Wage Stabilization Board was abolished as of July 29, 1952, and replaced by new tri-partite board with no power in settling labor disputes, serving only in an advisory capacity to the Economic Stabilizer on general policies and regulations for stabilizing wages and on the "interpretation or the application to particular circumstances" of the wage policies and regulations issued by ESA. Exempted from wage or salary control were professional engineers, professional architects employed by architectural firms, persons making \$1 or less an hour, and workers in firms employing 8 or fewer persons unless the President within 30 days certifies that the stabilization program requires continued wage controls in the particular business, industry, occupation or area.

Price controls were relaxed on miscellaneous items, principally food and agricultural products, and Office of Price Stabilization forbidden to deny retailers or wholesalers of materials their pre-Korean customary percentage margins over costs or their "customary charges." Farm price supports were set at not less than 90% of parity for duration of the act.

Congress declared its policy as favoring termination of wage and price controls "as rapidly as possible."

Contractual liability of firms was nullified if government control of materials prevents them or any of their suppliers or subcontractors from getting materials needed to fulfill their contracts. The Small Defense Plants Administration was extended a full year, and judicial review of Labor Department determinations under the Walsh-Healey Act was guaranteed.

The President was requested to use the Taft-Hartley Law to end the steel strike.

Contract Settlement—P. L. 337 provided for abolition of Appeals Board of Office of Contract Settlement between 6 and 9 months after date of enactment.

Defense Contracts—P. L. 426 extended through June 30, 1953, the President's authority to amend or modify defense contracts.

Water Pollution—P. L. 579 extended through June 30, 1956, the Water Pollution Control Act.

Emergency Powers—P. L. 313 extended until June 1, 1952, 60 of

the President's emergency powers; P. L. 368 extended them until June 15; P. L. 393 until June 30; P. L. 428 until July 3; and then P. L. 450 extended 48 of the powers for the duration of the national emergency, but not later than April 1, 1953.

Appropriations

For Fiscal Year 1952

Third Supplemental—P. L. 375 appropriated a total of \$971.3 million of a requested \$1 billion. Major construction funds were: Federal-aid highways, \$69.5 million from 1950 and 1951 authorizations; Federal Security Agency, for defense community facilities, \$4 million; Bureau of Reclamation, \$4.4 million; General Services Administration, \$4.4 million for a federal supply and records building near Kansas City; Housing and Home Finance Agency, \$9.4 million for defense community facilities, \$12.5 million for defense housing, and \$1.1 million for Alaska housing; Public Housing Administration, \$3.6 million; Corps of Engineers, \$5.8 million for emergency flood control.

Disaster Relief—H. J. Res. 427 provided \$25 million for relief in the Missouri Valley flood area.

Flood Relief—H. J. Res. 454 provided another \$55 million for flood relief.

Urgent Deficiency—P. L. 431 appropriated \$1.4 billion, mostly for Defense Department operations.

For Fiscal Year 1953

First Supplemental—P. L. 547 appropriated \$11.8 billion, of which major items are \$6 billion for foreign aid, \$2.3 billion for military construction, and \$2.9 billion for atomic energy construction. Other construction funds included: Coast Guard, \$5 million; Federal Security Agency, \$60 million for school construction; General Services Administration, \$11.4 million for District of Columbia hospital center; HHA, \$50 million for defense housing, \$4 million for Alaska housing, and \$8 million for slum clearance and urban redevelopment; Tennessee Valley Authority, \$150 million; Federal Civil Defense Administration, \$15 million for grants to the states.

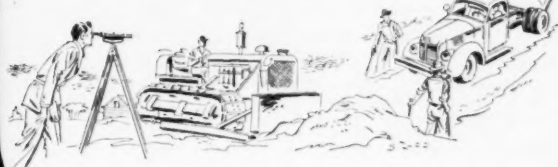
Independent Offices—P. L. 455 appropriated \$6.3 billion, including the following major construction funds: AEC, \$371.7 million for plant and equipment, and \$57 million for liquidation of contract authority; Public Buildings Service, \$101 million; improvement of federal buildings outside D. C., \$4.8 million; PHA, \$29.9 million for public housing agencies; National Advisory Committee for Aeronautics, \$17.7 million for construction and equipment; TVA, \$186 million; Veterans' Administration, \$108.8 million for hospital and domiciliary facilities and \$8.8 million for major alterations and improvements. GSA contract authorizations for construction of buildings outside D. C. were reduced by \$29.5 million, and for the D. C. Federal Courts Building, by \$3.9 million.

Labor-FSA—P. L. 452 appropriated \$1.8 billion, of which FSA received \$135 million for school construction in federally affected



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LEGISLATION

areas, \$134.7 million for hospital construction grants, \$3.2 million for research facilities, and \$6.1 million for St. Elizabeth's Hospital.

Interior—P. L. 597 appropriated \$541.7 million, of which the major construction funds follow: Southeastern Power Administration, \$959,000; Southwestern Power Administration, \$4.2 million; Bonneville Power Administration, \$66.5 million, with work by force account or hired labor limited to 12%; Bureau of Land Management, \$2.8 million for access roads; Bureau of Indian Affairs, \$17.5 million; Bureau of Reclamation, \$177.8 million, with force account construction limited to 12% of the cost of any project; Bureau of Mines, \$3.6 million; National Park Service, \$14.8 million; Alaska public works, \$13.2 million; Alaska roads, \$17 million, with a 20% limit on force account work; Alaska Railroad, \$3.9 million; Virgin Islands public works, \$2.6 million; emergency flood and storm repairs, \$1.4 million.

Army Civil Functions—P. L. 504 appropriated \$584 million, of which the following construction funds were included: \$236.8 million for rivers and harbors, \$325 million for flood control, \$3.5 million for the Soldiers' Home, and \$4.9 million for Canal Zone.

State-Justice-Commerce Departments—P. L. 495 appropriated \$1 billion for these departments. Construction items included: State—International Boundary and Water Commission, U. S. and Mexico, \$11.2 million. Commerce—Civil Aeronautics Administration, \$11 million for air-navigation facilities, and \$19.8 million for federal-aid airport program; Bureau of Public Roads, \$325 million for federal-aid highways, \$18 million for forest highways, \$1 million for the Inter-American Highway, and \$15 million for access roads.

Agriculture Department—P. L. 451 appropriated \$803 million to this department. Construction items included: Forest roads and trails, \$11 million; flood prevention, \$7.8 million; soil conservation, \$60 million; Rural Electrification Administration, authorized to be borrowed from the Treasury, \$100 million for electrification and \$35 million for the rural telephone program.

Defense—P. L. 488 appropriated \$46.6 billion for the Defense Department and related independent agencies, compared to \$51 million requested. Items related to construction included: military construction, Army civilian components, \$20 million; Army National Guard, \$153.3 million, an unknown part of which can be used for construction; Navy, \$3.9 billion for aircraft construction and procurement, an unknown quantity of which will be used to expand public plants, and not to exceed \$100 million for expansion of private plants, and \$50 million for equipment and construction of facilities; Air Force, \$43.3 million for "acquisition and construction of real property," \$106 million for Air National Guard, an unknown amount of which may be used for construction.

The act provided, in Sec. 633, that "No funds contained in this act shall be used for the purpose of entering into contracts containing Article 15 of the Standard Government Contract until and unless said article is revised and amended to provide an appeal by the contractor to the Court of Claims within 90 days of the date of decision by the department concerned, authority for which appeal is hereby granted."

Authorizations

Highways—P. L. 413, the Federal-Aid Highway Act of 1952, authorized to be appropriated for each of the fiscal years 1954 and 1955 \$550 million, divided as follows among regular federal-aid programs: primary highway system, \$247.5 million; secondary highways, \$165 million; and primary system in urban areas, \$137.5 million; to be apportioned in accordance with the formulas in the 1944 act. Additional authorizations for each of the fiscal years 1954 and 1955 included: national system of interstate highways, \$25 million; forest highways, \$22.5 million; forest development roads and trails, \$22.5 million; national parks, \$10 million; parkways, \$10 million, with an additional \$1.5 million authorized for the Baltimore-Washington Parkway over the 2-year period; Indian reservation roads, \$10 million; federal reservations, \$2.5 million. For each of the fiscal years 1953 and 1954: Nicaragua road from San Benito to Rama, \$2 million; Inter-American Highway, \$8 million. The law also authorized a \$10 million emergency fund and \$50 million for access roads and projects important to civilian or military defense.

Military Construction—P. L. 534 authorized a \$2.4 billion military construction program, broken down as follows: Army, inside U. S., \$124.4 million; outside U. S., \$88.6 million; classified, \$13.5 million, for a total of \$326.5 million. Navy, inside U. S., \$138.2 million; outside U. S., \$92.3 million; and classified, \$86.4 million, for a

total of \$256.9 million. Air Force, inside U. S., \$708.4 million; outside U. S., \$92.6 million; and classified, \$1 billion, for a total of \$1.8 billion.

The law requires "direct surveillance over the planning and construction by the military departments of all public works projects" by the Secretary of Defense, and creates for this purpose a "Director of Installations" to be appointed by the secretary.

Mortgages—P. L. 309 provided an additional \$52 million for Federal National Mortgage Association mortgage purchase commitments on certain defense housing projects.

Defense Housing—P. L. 531 authorized an additional \$1.4 billion in federal mortgage funds for defense and disaster housing and community facilities, broken down as follows: FNMA purchase commitments, \$900 million; FHA mortgage insurance, \$400 million; U. S. public housing, \$50 million; community facilities, \$40 million; and Alaskan housing, \$5 million.

Public Housing—P. L. 455 limited new public housing starts in fiscal year 1953 to 35,000 units.

Home Loans—P. L. 325 added \$125 million to the Veterans' Administration's revolving funds for direct home and farmhouse loans of not more than \$10,000 to eligible veterans unable to obtain loans from private sources.

Failed to Pass

Naming Subcontractors—S. 2907 and 8 similar House bills would have required general contractors to name specialty contractors and their prices in bids on federal projects. Exhaustive testimony was presented against the measure at hearings of a Senate subcommittee of the Judiciary Committee by some 30 A.G.C. representatives and by government agencies. The bill, in amended form—still objectionable to general contractors—was hastily reported out without recommendation in late June, but failed to pass when objected to on the Senate calendar on which it came up twice. House committee never held hearings on any of these bills. (History of S. 2907 and review of A.G.C. testimony in May, June and July issues of THE CONSTRUCTOR.)

Taft-Hartley Amendment—S. 1973 was passed by the Senate but died in House Education and Labor Committee. It would amend National Labor Relations Act to permit building trades unions and contractors to make collective bargaining agreements before workers had been hired for a particular construction job, and by mutual consent to enter into a union security clause; shorten from 30 to 7 days the time a man could work under security agreement without joining union; and permit union security type of agreement despite state laws prohibiting discrimination in hire.

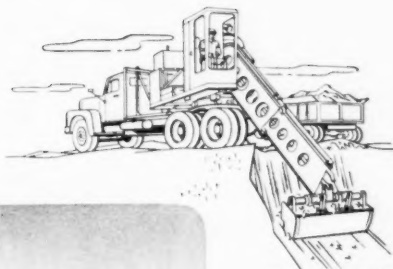
Federal Safety Aid—Two bills introduced in Senate which would establish federal control over accident prevention. The Murray bill, S. 2714, would have established a federal grant-in-aid system to benefit state labor agencies. Money would be allotted to states on a 75-25 matching basis with the federal government providing the larger share. States would receive funds on the basis of population, number of workers and special hazards in industry. The Humphrey bill, S. 2325, called for a bureau of accident prevention under the Labor Department. A.G.C. presented statement opposing federal supervision of industrial safety regulations (May CONSTRUCTOR).

Judicial Review—S. 2487 would have offset effects of the Supreme Court decision in the Wunderlich case and provide for judicial review of disputes arising under government contracts. A revised bill, in line with recommendations of A.G.C., was passed by Senate on July 3 after all known objections were cleared away, but House could not take it up in its efforts to rush through to adjournment. Since measure had not been reported out by House Judiciary Committee because of lack of time, House sponsors could not obtain approval to bring it up under a suspension of the rules. Senate passage strengthens prospects for early enactment in next session. (History of bill, A.G.C. actions and review of testimony in December 1951, and January, February, March, April, July 1952 issues of THE CONSTRUCTOR. Also, page 31 of this issue.)

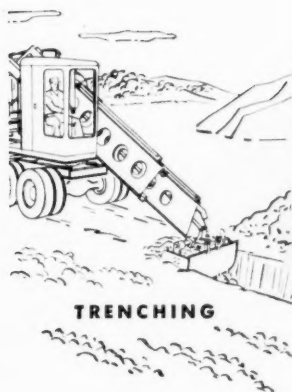
St. Lawrence Seaway—Senate bill was sent back to the Foreign Relations Committee which had reported it out without recommendation. A similar bill was snaggled in the House Public Works Committee. This action by Congress all but killed the seaway project which Canada hopes to begin work on next spring.



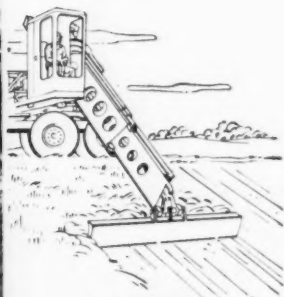
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B. R. A. B.'s Panel of Contractors Urges Improved U. S. Procedures

- Potential Conservation in Building Construction
- Pre-Bidding Conferences Important Proposal

(EDITOR'S NOTE: This is the first of a series of articles digesting the seven panel reports upon which the Building Research Advisory Board of the National Research Council based its conservation recommendations in a report for the Defense Production Administration (July CONSTRUCTOR, page 117). The 200-page report contains more than 200 specific recommendations by the panels for conservation in building construction, which both DPA and B.R.A.B. herald as a basis for long-term conservation in private as well as federal construction. The full board did not necessarily approve all recommendations made by its panels, but "certifies to the competence and integrity of the panels," and asks careful study of their reports.)

» CONSERVATION practices in building construction recommended by the Building Research Advisory Board's advisory panel on building construction practices deal almost entirely with administrative procedures concerning relations between the government as the owner and contractor.

The 11-man panel of building contractors, all members of The Associated General Contractors of America who have had extensive experience with federal construction in various parts of the country, considered conservation on large construction jobs "where quantity production methods and the use of modern equipment are the rule."

Premises Adopted by Panel

Pointing out that the administrative practices of the owner or his representative have a direct bearing upon conservation of time, materials and cost during the construction process, the panel said maladministration by the owner causes delays which nullify efforts to conserve.

"The contractor measures conservation in terms of cost. In this country, technical progress in construction methods results from competition between builders to achieve speed and quantity production. Conservation of materials by methods requiring more time than manpower is justified only

when net economy is the result, or critical shortages justify added cost."

In addition to teamwork between designer, owner and builder, the panel emphasized the importance of: (1) comparative analyses of construction methods by the designer, (2) coordination in design to integrate all fields of engineering and produce complete plans and specifications, and (3) avoidance of changes and delays on the job.

Howard Cooley, director of the Defense Production Administration's Conservation Division, announced last month that DPA has extended its contract with the B.R.A.B. on building conservation research for another year, and that some top federal construction administrators are giving "serious attention" to the recommendation for an inter-agency mechanism for collaboration by the agencies among themselves and with industry.

"We expect to add appreciably to the benefits which we feel have already accrued from this advisory service," he said. "We shall be able to have study made of some aspects of the problem for which there were neither time nor funds during the past year. Staff services from B.R.A.B. will also be available to the various agencies in their study and consideration of the recommendations of the report, and to serve whatever collaborative effort may develop."

Principal proposal of the construction panel was that:

"Government agencies should adopt the procedure of holding conferences well in advance of bidding, at which time prospective contractors may propose conservation measures in the formative stage of design before the contract documents are completed. The advisory services of the contractors in such instances would be voluntary."

Since contractors build what is required by contract documents, their knowledge can be used most advantageously prior to completion of the building design, the panel said.

"The potential assistance that build-

ers may contribute to a conservation program rests in their experience and their ability to recognize practices wasteful of money, materials, or manpower."

On the premise that conservation begins with design, the contractors recommended that "Every incentive should be provided by the government to architects-engineers to produce complete plans, with special emphasis on coordination of all mechanical layouts with the structural and architectural designs."

The panel also stated: "Prompt ac-

Advisory Panel Members

The all-A.G.C. Advisory Panel on Building Construction Practices was composed of the following:

Chairman, William Muirhead, Muirhead Construction Co., Durham, N. C., secretary-treasurer of the A.G.C., past president of the A.G.C. and a member of B.R.A.B.

Frank F. Burrows, William & Burrows, Inc., Burlingame, Calif., vice chairman of the A.G.C. Building Contractors' Division.

Fred J. Early, Jr., Fred J. Early, Jr. Co., San Francisco, a national A. G. C. director.

A. J. McKenzie, Jr., McKenzie Construction Co., San Antonio, Texas.

Robert Moyer, Chas. H. Tompkins Co., Washington, D. C.

Carl W. Olson, Olson Construction Co., Lincoln, Neb., a national A.G.C. director.

R. A. Smith, P. J. Walker Co., Los Angeles, a member of the A.G.C. Advisory Board.

H. C. Turner, Jr., Turner Construction Co., New York City, a national A.G.C. director.

John Volpe, Volpe Construction Co., Malden, Mass.

W. Murray Werner, The Werner Co., Shreveport, La., chairman of the A.G.C. Building Contractors' Division and Executive Committee member.

E. J. Wheeler, Frank Messer & Sons, Inc., Cincinnati, a national A.G.C. director.

Also advisors on building construction practices were:

William E. Cramer, Jr., Cramer-Vollmerhausen Co., Washington, D. C.

Henry C. Knoche, John K. Ruff Co., Baltimore, Md.

A. M. Miller, Virginia Engineering Co., Newport News, Va.

R. A. Moyer, Chas. H. Tompkins Co., Washington, D. C.

Welton A. Snow, manager, A.G.C. Building Contractors' Division, Washington, D. C.

William B. Spencer, Consolidated Engineering Co., Baltimore, Md.

John Russell, Day & Russell Co., Richmond, Va.

tion should be taken to review federal specifications for the purpose of eliminating old clauses which hinder conservation. Federal specifications should be made simpler and uniform with each other and with national standards."

Hinting that contractual procedures or regulations sometimes discourage bidding by the most competent contractors, the panel stated:

"Government contracts and regulations governing bidding should be reviewed for the purpose of eliminating clauses or procedures which unnecessarily discourage competitive bidding."

Changes During Construction

The contractors' panel dwelt at length on the problem of changes during construction and came up with the general recommendation that "Procedures for making and approving changes on government construction should be reviewed to correct those procedures conducive to waste of money, time, materials, and manpower caused by slowdown or partial stoppage of work."

In elaborating on this subject, the panel took note of the usual cost and waste attendant to changes affecting basic design either structurally or mechanically, and stated that while some changes are unavoidable, "many are caused by incomplete design, sometimes caused by haste to start construction before end of a fiscal year."

Problems deserving corrective action, the contractors asserted, "center around the authority of contract officers, variations in their practices, and the need for procedures to simplify making decisions on the job. Where the authority of the contracting officer and each member of his job organization is not clearly outlined to both the members of his organization and to the field representatives, costly confusion sometimes results. A clear statement of such authority would eliminate unauthorized individual field changes."

The panel conceded that some changes which might better be called "substitutions," where use of alternate materials does not change the basic function expected of the materials, often expedites work and assists in conserving manpower or speeding up the project when approved at the opportune time.

However, regardless of reasons for changes, the contractors said "procedures for effecting a change on gov-

ernment construction are often unnecessarily complicated or arbitrary and do not correlate the time required for decisions and agreement upon the changes with time lost by stoppage or slowdown of the work."

The panel noted that "supervision and inspection of government construction is subject to many variations determined by the performance of individual inspectors and their exercise of authority. Military construction is often subject to the whims of commanding officers. A better inspection program by government agencies would improve their reputation among contractors, thereby substantially lowering construction bids."

"With all due respect for the personal factors involved, every effort should be made to train supervisory and inspection personnel, to standardize supervisory and inspection procedures, and to propagate the principle that supervisory and inspection personnel can best assist the conservation program by performing their duties as part of the construction team employed to help build the structure."

Since contractors find it "not unusual to have a facility completed on schedule after expending much overtime and added expense, only to be left standing idle for a considerable time before actually being used," the panel recommended greater care in weighing the "real need for hasty completion against the resulting waste of materials and labor."

Alternate Construction Methods

The panel recommended:

"On government work, incentive should be provided to architects and engineers to produce comparative design analyses of new and existing methods for conservation of materials. Pre-bidding conferences should be held as early as possible to complete the evaluation of proposed alternatives by contractors experienced in conservation of cost, materials, and manpower, thus making it possible for the invitation to bid to include as few alternates as possible."

In reaching this conclusion, the contractors stated:

"The adoption of a new construction method for the express purpose of conserving materials (prestressed concrete, for example) is governed by consideration of cost, time, and manpower factors involved in the new method. American construction prac-

tice has stressed quantity production. Consequently, material-saving designs, involving precision methods, may be sacrificed for designs with enough safety factors to insure more speed and require less manpower."

"In other words, American practice is typified by 'spending materials to save time and manpower.' Protective labor regulations intensify the shortage of skilled manpower and place a further premium upon conservation of labor. The alternative has been to adopt patented devices or machinery to increase productivity."

"The adoption of new construction methods, as herein referred to, by the contractor presupposes that comparative cost analyses have been made at the design level. Decisions as to the priority to be given to conservation of materials over conservation of cost or manpower must be made by the owner (on federal construction, the owner being the government)."

"In the comparison of design and structural principles, the use of scale models has proven to be valuable for testing the soundness of structural detail or evaluating the effectiveness and cost of a complete design."

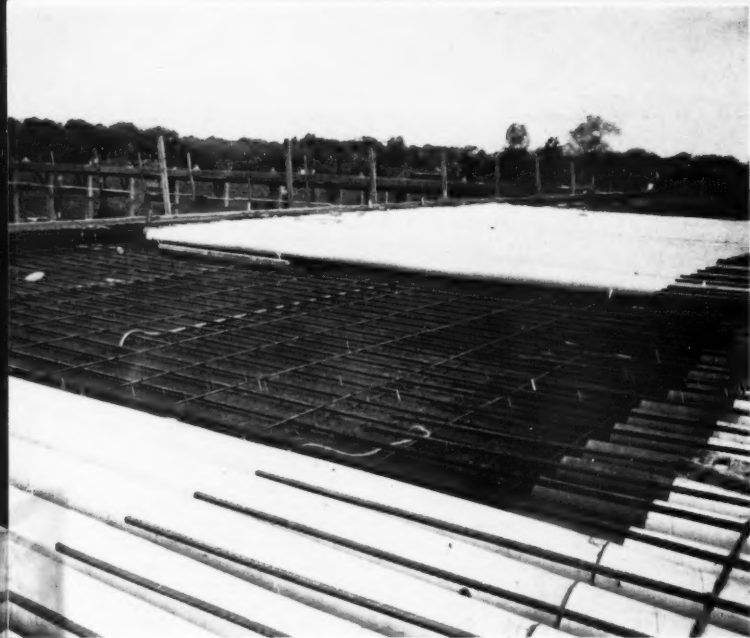
School Funds Reserved

Federal funds totaling more than \$96 million have been reserved for school construction projects in "federally affected" areas in July, the U. S. Office of Education has reported.

The funds are used to provide grants to local school districts for critically needed school buildings in overcrowded boom towns. A total of \$195 million has been appropriated for this purpose as authorized by the 82nd Congress just adjourned.

Reservation of the funds for 386 educational agencies does not constitute final approval, as other technical hurdles exist. The projects are approved on a basis of "relative urgency of need."

Largest amounts will go to three Virginia school boards—Norfolk County (\$3.5 million), Arlington County (\$2 million), and City of Portsmouth (\$2 million). Other communities receiving over \$1 million are: Mobile County, Ala.; Tucson, Ariz.; San Diego, Calif.; Contra Costa County, Calif.; Muscogee County, Ga.; Harford County, Md.; Albuquerque, N. Mex.; Hempstead, N. Y.; Comanche County, Okla.; King County, Wash.; Oahu, Hawaii.



Photos by William Eckert

Connecticut Engineer Designs Concrete Slab with Paper Tubes to Reduce Weight

» THE CONTINUING effort of builders to make more versatile the common concrete slab has turned up some unique methods. New studies of reinforcing, pouring and curing appear frequently. The humble hunk of concrete is now pre-cast and pre-stressed, tilted into place with cranes, and hoisted into position with jacks.

The material's great advantages—economy, durability and strength—are sometimes offset by a big disadvantage—dead weight.

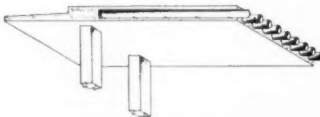
In Windsor, Conn., recently, a structural engineer unveiled another version of the original slab, this one with a built-in feature designed to eliminate greatly the problem of dead weight. The inventor of the process, A. J. Macchi of Hartford, Conn., did this simply by inserting heavy paper tubes throughout his concrete floor and roof slabs.

The long paper tubes, 6 in. in diameter and $1\frac{1}{4}$ in. thick, are laid side by side throughout the form in a unique arrangement with reinforcing bars before the concrete is poured.

The process is getting a practical test in a \$2.4-million high school in Windsor. The two-story, flat-roof, masonry and concrete structure contains 53 classrooms, library, auditorium, cafeteria, gymnasium, shops and 23 other rooms, besides toilets and auxiliary rooms. Here, the Macchi

Tube Slab is being used profusely in 101,000 sq. ft. of floors and roof spans.

In classroom wings and the administration section, corridor walls are 12-in. bearing masonry, and exterior walls are 12-in. sq. columns spaced on a 10-ft. module with steel sash between. In between these wings, 10-in. Macchi Tube Slab was used for the second floor and 9 $\frac{1}{2}$ -in. slab for roof framing. Both roof framing and floor were poured with the fillers at 8 in. on center.



Cut-away drawing of exterior spandrel and Macchi Tube Slab used on school.

The slabs span corridor walls to ribbon beams within the slab thickness over exterior columns. Acoustic tile ceiling is stuck directly to the bottom of the slab.

Macchi Tube Slab construction was used in other areas of the Windsor School with thicknesses ranging from 9 to 12 in. In general, for simple roof spans exceeding 28 feet clear, a 12-in. slab with 8-inch filler tubes at 10 in. on center was used. Wall thickness of these tubes was approximately $\frac{3}{16}$ of an inch.

Macchi Tube Slabs are constructed as are conventional flat slabs except for the addition of filler tubes. Spacer chairs and reinforcing bars with tie steel are set in place on flat plywood forms. To prevent flotation of the tubes, steel chairs are nailed to the forms. The 20-penny nails used are bent over the steel and driven through the plywood into the support framing. It was found convenient on the Windsor School to place electrical conduits and sleeves on the forms before the reinforcing steel.

Paper tubes positioned in form with reinforcing bars before pouring.

Each paper tube filler is tied in place at intervals from 6 to 8 ft. on tie steel which runs perpendicular to the main steel. Tubes are spaced with a toothed templet. Where electrical boxes, sleeves or pipes interfere, the tubes were merely cut with knife to bypass the obstruction. Where negative steel exists, tie steel is set directly on the tubes with main steel across and tied thereto.

The design of Macchi Tube Slabs was made using moment distribution, with the method of fixed points as a check. It was found feasible to vary the position of the tubes in a slab section with reference to the surfaces by using supporting chairs of varying heights. In this manner, a greater concrete area is obtained on the compression side of the slab. The tubes are flexible enough to bow when tied.

Special details were developed for Macchi Tube Slab construction. Under laboratory classrooms where plumbing and other services occurred over a finished room, rectangular ducts with open bottoms within the slab thickness were provided. Where dividing partitions running parallel with the tubes occurred, a tube was omitted and extra steel added.

Details of field application were improved as work progressed. Various methods of holding down the steel to which the tubes are tied were used. It was found that a 20-penny nail driven through the plywood forms into the support framing was most feasible. Also, different ways of tying tubes in place were used. It was finally decided to use baling twine which could be applied by the carpentry trade.

The tubes used in the first slabs were wax-coated. Due to field conditions, however, the engineer decided to change the tube construction. This

was done by eliminating the wax coating and substituting a lap joint wrapping of kraft paper having an asphaltic layer. This design has proved satisfactory.

For pouring concrete, the contractor developed a technique to obtain efficiency and good work. Concrete, having a minimum compressive strength of 2,500 pounds, is vibrated into place between the tubes with a small vibrator. The same crew was kept on this operation and the improved efficiency was obvious.

Cost Comparison Made

A special removable platform runway was designed for the concrete buggies but the contractor later found that the tubes themselves were strong enough to support a plywood runway placed directly upon the tubes. The buggies were then rolled along the runway.

An exceptional opportunity to make a comparative cost analysis was offered by two school buildings having similar classroom wings and designed by the same architect and constructed by the same contractor.

The Mark Twain Elementary School in nearby Hartford, Conn., is a two-story masonry, concrete structure with floors of open web joist, concrete slab on steeldeck and plastered ceiling. The total floor area is 63,000 sq. ft. It was erected at a building cost of \$832,250 with a square foot cost of \$13.21.

The Windsor High School, having a total floor area of 144,531 sq. ft., was erected at a building cost of \$1,884,857 or a square foot cost of \$13.01.

Advantages of Slab Listed

The Macchi Tube Slab in comparative cost analysis, using quoted contract prices over modular areas, proved to have definite economic and structural advantages over conventional structural systems in schools and other type buildings. These advantages were based mainly on the following facts:

1. The system can be designed and constructed to follow a close stress pattern, thus getting the most work out of the materials without adding dead weight. In classroom and administration sections of the Windsor School, with side bays averaging 24 ft. clear span, the reinforcing steel averaged three pounds per square foot.
2. The shallow depth of construction reduces the floor-to-floor height, cuts cubage and results in shorter

walls, partitions and services. The floor system of the Windsor School was 10 in. shallower than that of the Mark Twain School.

3. The slab soffit can be used as a finished ceiling conforming to fire codes or as a surface for the direct application of acoustic tile. This eliminates the necessity of a hung ceiling as was required at the Mark Twain School.

The flexibility of this system for architectural design is also a definite advantage of this system not inherent with precast systems. Mr. Macchi, however, made it clear that there are certain types of structures in which his system would not be economical.

The contractor for both the Mark Twain School and the Windsor High School was A. E. Stevens Company of Springfield, Mass. A breakdown of the contractor's floor framing cost figures, based on a modular area of floor construction for the classroom wings, shows the Mark Twain School cost at \$1.57 per sq. ft. The Windsor High School cost is \$1.35 per sq. ft.

Saves 25¢ Per Sq. Ft.

While it was impossible to obtain all breakdown figures for the savings resulting from reduced cubage because of the shallower floor, a conservative evaluation by the contractor, using as many figures as possible, indicates that an additional savings of 25¢ per sq. ft. can be expected. Although these figures are not substantiated by the basic bid prices of the two jobs showing a difference of only 20¢ a sq. ft. in favor of the Macchi Tube Slab, the contractor said that all savings would

not show up in the first job employing a new type of construction.

The Navy has made tests of the Macchi Tube Slab at the U. S. Naval Civil Engineering Research and Evaluation Laboratory at Port Huene, Calif., and reported that it had "tested the Macchi structural slab with most satisfactory results."

The paper tubes for the Windsor High School were scheduled for fabrication and erection in the same manner as reinforcing bars. The tubes are made by Sonoco Products Company of Lowell, Mass., which can furnish tubes of any diameter and length, being limited only by transportation.

Architects Discuss Materials

"Structural Resources for Architectural Design" was the theme of technical sessions of the American Institute of Architects' recent convention held in New York City.

Builders, architects and engineers reviewed the possibilities and advancements in use of concrete and other materials. Conservation of materials also came in for serious study at the architects' meet.

Re-elected to serve a second year were President Glenn Stanton, Portland, Vice Presidents Kenneth Wischmeyer of St. Louis and Norman J. Schlossman of Chicago and Treasurer Maurice Sullivan of Houston.

Concern of the architects with "the encroachments of building contractors and government bureaus upon the field of the privately practicing architect" sparked authorization of a three-year \$100,000 public relations program.



Workmen ready tubes in foreground while others pour concrete in background.



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Heavy Construction Notes

- The American oil industry is planning to spend \$4 billion this year on capital improvements—more than any other year. Expenditures for new refineries and improvements is expected to reach \$566 million, compared to last year's \$263 million. New wells, pipelines, tankers, fertilizer and chemical plants will take the rest.
- Electric power projects costing about \$3 billion have been approved for construction by the Defense Production Administration. The 26 projects given certificates of necessity last month raises the total approved thus far to \$4.5.
- New rail lines in connection with expansion of the iron and steel industry account for a major portion of the total such construction in the U. S. these days. The largest new road to be built on the continent in many years is the Quebec, North Shore & Labrador Railway, projected to run 350 mi. north from the St. Lawrence River, to haul iron ore. About 134 mi. of new lines were under construction in the U. S. early this year—many of them being spurs and short lines into defense establishments.
- A \$22-million construction budget for 1952 has been approved by the Florida Power and Light Co. Company engineers have told the directors that \$332 million should be expended on plant and system expansion during the next 10 years.
- The \$78-million Clark Hill Dam near Atlanta, Ga., is scheduled for limited operation this fall.
- Power plant construction in the U. S. must boom to add the 40% increased power capacity desired within the next three years. The new U. S. goal is for 32 million kilowatts more by '55. The Columbus and Southern Ohio Electric Company's plant, below, is typical of such facilities.



Engineers Get \$562 Million Appropriation

• \$448 Million Will Go to Construction in 1953

» CONGRESS, after prolonged debate and severe attacks of the bill by economy-minded senators, appropriated \$561,902,600 for the civil works functions of the Corps of Engineers in fiscal year 1953.

The funds were signed into being by the President last month. They are allocated to selected construction, maintenance, planning and survey projects in the Corps' flood control and river and harbor improvement programs. Flood control projects receive about \$325 million; river and harbor improvements are given about \$237 million.

Construction funds total \$148,106,600 for 72 flood control projects and 26 rivers and harbors projects, as well as \$45 million for the Mississippi River project and \$1 million for the Sacramento River project.

For planning operations, the Corps

will receive \$1,255,000 and for surveying, \$2,625,000.

Five of the 11 largest projects are in the Columbia River Basin. They are the Detroit Reservoir in Oregon (\$10.3 million), Lookout Point Reservoir in Oregon (\$16.6 million), McNary Lock and Dam in Oregon and Washington (\$63 million), Chief Joseph Dam in Washington (\$15 million), and the Dalles Lock and Dam, Oregon and Washington (\$20 million).

Other projects above \$10 million are: Garrison Reservoir, N. Dak. (\$31 million); Fort Randall Reservoir, S. Dak. (\$32.5 million); Mississippi River and Tributaries (\$45 million); Folsom Reservoir, Calif. (\$17 million); Old Hickory Lock and Dam, Tenn. (\$10 million); and Jim Woodruff Lock and Dam, Fla. (\$10.3 million).

New Projects Scheduled by Reclamation

• Construction Will Begin This Year on 10 Western Jobs

» INVITATIONS to bid on initial construction work on the first two of 10 new projects or units of projects have been issued and dirt will fly at an early date, the Bureau of Reclamation announced last month.

Funds for the new starts are a part of the bureau's appropriation provided in the closing days of the 82nd Congress—\$2.5 million to initiate work on the Tiber Dam in northern Montana and \$150,000 to drill five wells for a pumping unit of the Minidoka Project in southern Idaho.

Commissioner Michael W. Straus said that construction would be started after an adequate soil survey and land classification has been made. Land irrigated by the latter project will be turned over to homesteading by veterans and others.

The eight other projects, with their appropriations and expected construction starting date are:

Sly Park Unit, Central Valley Project, California, \$1,250,000; bids to be invited on construction camp Sept. 15.

Solano Project, California, \$3 million, bids to be invited on construction camp Oct. 15, but award of contract will await Congressional hearings.

Savage Rapids Dam, Oregon, \$700,000; bids to be invited on dam Oct. 1.

Weber Basin Project, Utah, \$1,350,000; bids to be invited on Gateway Tunnel Sept. 15.

Kennewick Division, Yakima Project, Washington, \$1.5 million; bids to be invited on Chandler Canal on Sept. 3.

Rapid Valley Unit, Missouri River Basin Project, Wyoming-North Dakota, \$1 million; bids to be invited on Partola Dam Sept. 2.

Missouri Diversion Unit, Missouri River Basin Project, Montana-North Dakota, \$2 million; bids to be invited on stripping dike area Aug. 8.

Webster Unit, Kansas, \$1,500,000; bids to be invited on Webster Dam foundation Oct. 1.

The Thompson-Starrett Co., A.G.C., New York, has won an \$11 million contract to build a dam on the Sakarya River in Turkey. The American firm will head a group of Turkish-German associates to construct the dam as the first major part of a scheduled \$35 million hydroelectric project. It will be the largest in Turkey—about 350 ft. high and 1,000 ft. long.

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1 1/2' to 6' wide



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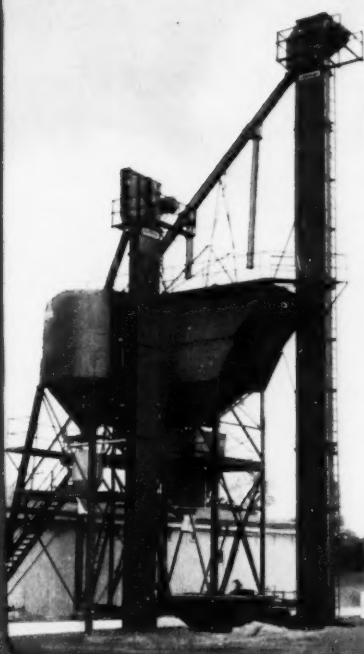
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Coming Air Age Spurs Airport Improvements Throughout U. S.

- Increasing Plane Travel Demands Larger Fields
- CAA Announces \$19 Million Program for 1953

» TWO YEARS ago the Port of New York Authority made some predictions about the future of air transportation which seemed incredible.

In 20 years, the report said, the air age would finally be here, with more air traffic than rail travel. Twenty-two billion passenger miles would be recorded in 1980—compared with 6.6 billion in 1949. Air transport would carry virtually all of the common-carrier passenger traffic moving beyond 1,000 mi. and more than 50% of the traffic between 150 and 1,000 mi.

Now, to the surprise of the skeptics, the air transportation trend is five years ahead of the forecast. The airlines last year carried 25 million passengers—a gain of 29% over 1950. A milestone was reached in 1951 that is indicative of the coming air age. For the first time, more people traveled by air than by Pullman.

Air travel between two cities—Los Angeles and San Francisco—already accounts for over 50% of all scheduled rail and bus travel between the two cities.

The natural result is that more American cities are planning and building larger-than-ever airports. Mass air transportation between the nation's major cities is necessitating large construction projects—longer, heavier runways, aprons and taxiways, huge terminal buildings and hangars. New York City's Idlewild field on Long Island covers 4,900 acres.

A few weeks ago, Pittsburgh, after a decade of intermittent construction, began operations at the nation's second largest airport. Several miles of heavy runways, major water and sewage systems, hangars, field lighting and drainage composed in entirety a massive construction project. To carry trav-

elers from downtown Pittsburgh, a four-lane, limited-access express route was run out to the airfield.

The seven-story terminal building, housing a hotel, post office, bank, theater, shops and even a night club, overlooks a horseshoe-shaped loading platform which can facilitate loading of 30 planes at once. Other features: a sightseers' deck, a parking area for 5,000 autos, and an underpass 250 ft. long.

Total cost of the 1,600-acre facility has run up to \$38 million. The terminal alone cost \$10 million.

CAA Approves 169 Jobs

That plans for landing fields and their accompanying commercial enterprises are widespread is apparent in other cities—large and small—throughout the U. S.

The Civil Aeronautics Administration revealed last month that 169 airport construction projects will be undertaken in 1953 with the aid of federal matching funds. A total expenditure of \$19 million is involved—all of it slated for improvement of existing facilities. The original intent of the Federal Aid Airport Program, initiated in 1946, was to make \$100 million annually available for such developments. Congress authorized that amount and since then has consistently held actual appropriations to lower amounts.

The shortage of steel has hampered the civil airport ambitions of many communities, also, although others have been compensated where the military required use of the existing facilities and undertook to expand and strengthen runways and enlarge airport installations.

Many Projects Fairly Large

Although construction of no entirely new airports is slated under the CAA 1953 program, it is apparent that extensive improvements are planned.

Minneapolis wants to replace old concrete runways, taxiways and aprons and improve the field's draining system to the extent of \$415,000. St. Louis' Lambert Field will receive \$562,312 worth of improvements. Albany will spend \$700,000 on its terminal building. New York City will spend \$400,000 for lights and taxiways.

Salt Lake City plans to expend \$547,030 for new runways and lights. Chicago's O'Hare Field will get \$620,000 worth of new utilities, buildings and paving.

Airport designers are straining to

Commission Advises Safer Airport Design

- Doolittle Group Hits Lag in Federal Aid for Construction

» THE PRESIDENT'S Airport Commission, appointed last February after the third deadly airliner crash near the Newark, N. J., airport, has turned in a report on future airport location and use.

Headed by Lt. Gen. James H. Doolittle (USAF, ret.), the commission made an intensive study of national policy toward airfield construction and recommended closer federal supervision of local airport projects.

The three-man group noted that the federal-aid airport program has lagged considerably. A 1946 act authorized matching-fund aid of \$100 million annually, but Congress has voted only \$170 million total in the six years since then. The \$26.5 million in the President's budget this year has been further cut by Congress. This action was taken in spite of the fact that about \$75 million of local funds is available and waiting for federal matching aid to begin projects.

The commission urged that the Civil Aeronautics Administration take a

more active part in sponsoring higher standards for airfield projects. If local cooperation lags, the report suggested that federal aid be withheld and power to close or down-grade the airport be given to CAA.

Some specific design recommendations were made by the commission, particularly affecting runways and approaches. Among them were these:

- Construct single-runway airports instead of the conventional star-shapes in the future. Add a short cross runway where necessitated by strong crosswinds. The primary runway should be developed fully.

- Clear land and remove all obstacles 1,000 ft. beyond each runway end and lengthen main runway where possible.

- Zone the approach areas and restrict new construction in fan-shaped zones around runway end. Permit only buildings of limited height in the area 2 mi. deep and 6,000 ft. wide beyond the runways, none of which should be used for public assembly.

HIGHWAYS • AIRPORTS

keep pace with the increasing traffic demands. At O'Hare Field, the terminal is so designed that it can handle 90 planes simultaneously — 360 plane movements an hour. The two-story, reinforced-concrete structure will have 1.5 million sq. ft. of enclosed floor area. Six runways will run into the terminal circle as tangents. Each will be of 15-in. reinforced concrete, 9,500 ft. long and 200 ft. wide.

The field itself, which is on a 6,400 plot, is 18 mi. from the Chicago loop. As in other metropolises which must locate their air centers far from the congestion for safety reasons, express highways are planned to carry travelers to and from the field in 20 minutes. There will be parking space at the airport terminal for 6,500 autos.

Form National Roads Group

A National Good Roads Association is being formed, as the sponsors report, "to provide a bridge between state and national efforts to solve our serious highway problem."

A number of state Good Roads Associations are backing the organization which states its primary purpose is to assist all who are already working for a better highway system in cooperating more effectively. To that end it has listed tentative aims, including the following:

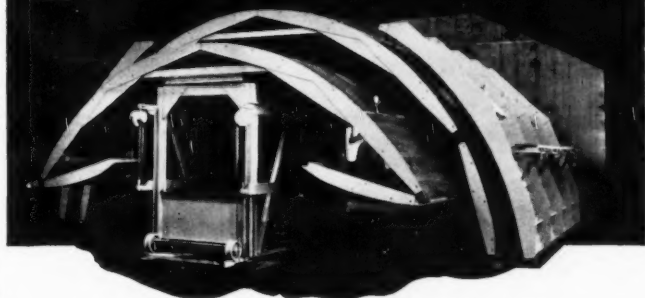
1. To bring the demand for good roads into focus at the state level.
2. To assist properly qualified state organizations which are working for better roads to obtain the cooperation of national organizations and firms of national scope.
3. To provide representation at national level for state organizations interested in good roads, to the end that highway transportation may receive consideration in the form of federal aid in reasonable proportion to that which it receives as a source of tax revenue.

The organization committee said, "We believe that well-educated public opinion, expressed at state level, is the key to our highway problem. We intend that the National Good Roads Association shall assist in making this opinion not only vocal but also well informed."

* * *

Idaho's State Highway Department estimates it would cost \$165 million to fully modernize the state's roads over a 10-year period and \$89 million to meet "critical construction needs."

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For single structures or great housing projects in any geographical location, investigate the beauty, economy and durability of Truscon Double-Hung Steel Windows. See SWEET's for details, and write for literature describing the entire line of Truscon Steel Building Products.



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» THE PRESSING need for space at the A.G.C. headquarters office to accommodate internal conferences or joint meetings, brought about by increasing membership and the enlarging scope of activities, has been met with the completion of a conference room, featuring an imposing conference table presented by the presidents of the association.

A.G.C. Board Meeting Plans—Page 23

Heretofore it has always been necessary when holding a meeting, to use the facilities of a hotel, a matter of considerable inconvenience and expense. During recent months when this need became imperative, additional floor space which lent itself to conversion became available.

"Although the new facilities were designed with the requirements of the Executive Committee in mind, they will also serve admirably for other meetings and functions of the association," said Mr. H. E. Foreman, A.G.C. managing director. "All staff members will be immediately available to meetings in the new conference room and will be able to carry on their work with a minimum of interference. A.G.C. records will also be nearby, greatly facilitating the meetings of various bodies."

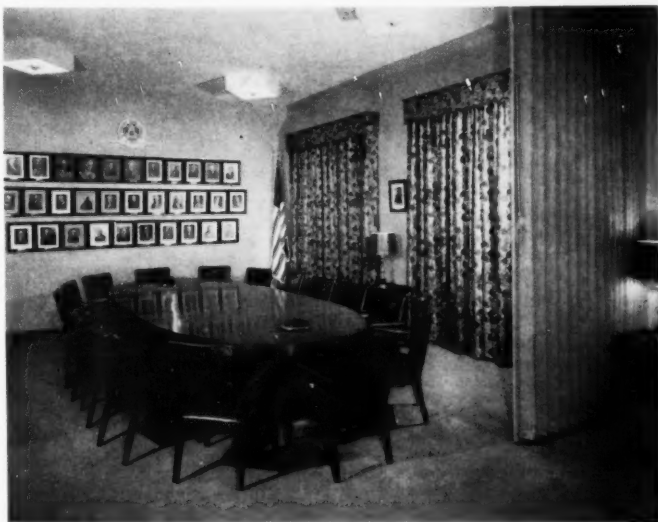
The room honors the past presidents of the A.G.C., who presented the large, oval, walnut conference table to the association. The table is in three sections and is 15 feet long and six feet wide when all sections are assembled. It will then comfortably accommodate 16 persons and is so designed that all those seated can see each other directly.

The table bears a metal plaque which reads: "Presented to The Associated General Contractors of America, Inc., by those who have served as its presidents. July 1952."

In addition to the conference room, private space has been provided for the convenience of individual A.G.C. members visiting Washington on private affairs. Here they may have the use of a telephone and the facilities of the A.G.C. switchboard with its records of the phone numbers and other pertinent information on government agencies and ranking personnel, as well as other office facilities. For members not planning to stay in the nation's capital overnight, this will eliminate the necessity of using a hotel room as a temporary headquarters.

National Office Has New Conference Room

• A.G.C. Presidents' Round Table is Central Feature



Two views; above, portraits of the 32 past presidents of the A.G.C. who presented the table (shown with its three sections assembled) to the association. Photo on the right wall is of Arthur S. Horner, current A.G.C. president. The accordion-type wall in the right foreground closes off the conference room when it is not required, to form a smaller room as seen below to the right. The center portion of the conference table is then used there. Southwest exposure of the room which faces Pennsylvania Avenue, the "avenue of parades," affords a magnificent view across the Potomac River to Arlington, Va., with the Washington Monument and the Lincoln and Jefferson Memorials in the foreground. Walls are of light green, carpeting is in a darker shade of green and the chairs are upholstered in dark red leather. The drapery, with green as its dominant motif, unifies the color scheme.



"Specs" can't begin to tell the story
—we invite you to

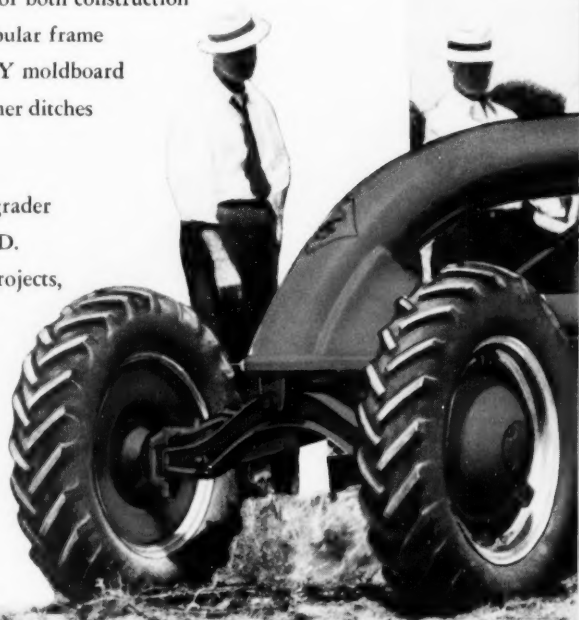
See the model D

Only by watching the Model D *at work* will you believe that a grader costing so little can do so much . . . and that's just what your Allis-Chalmers dealer wants you to do. See how tandem drive design with engine over the drive wheels helps the "D" do a better job of both construction and maintenance. Look closely at how that tubular frame absorbs shocks . . . and how the ROLL-AWAY moldboard enables it to move bigger windrows . . . cut cleaner ditches . . . maintain more miles per day.

Yes, even if you've always been a heavy-grader man, you owe it to yourself to see the Model D. It's *all grader* . . . handles *all* jobs on *some* projects, *some* jobs on *all* projects. So let your nearby Allis-Chalmers dealer give you a working demonstration *soon*.

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And with this great P&H crane you get smooth, accurate hydraulic control, famous P&H Magnetorque Swing, and a triple safe planetary boom hoist. Add to this the strength of welded steels and you've got a crane that will outperform any other machine in its class. For the full story, write for Bulletin X122-1.

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President Orders Deferment of Construction Apprentices

- Exemption Is Temporary But Lets Men Finish Training
- Local Draft Boards to Have Final Say on Deferment

» **PRESIDENT** Truman recently ordered the systematic draft deferment of apprentices in the building trades along with other "essential industrial apprentices."

This ruling, the Chief Executive said, "will contribute materially to our program of maintaining necessary industrial and farm production consistent with the principles of the Selective Service System."

"These orders do not permit permanent exemption of any worker from Selective Service. Rather, they provide a more orderly basis for granting the temporary deferments which local boards have customarily extended to qualified individuals."

Boards Have Quotas to Meet

The order is designed to defer apprentices until they can complete their training in those particular trades considered to be essential to national defense.

However, the local draft boards are the final authority to pass on the deferment of apprentices. These boards have quotas to meet and will probably make their decisions accordingly.

Basically, the order is designed to help give equal deferment considera-

tion to workers in the trades as was given to men in college.

This move by the President will help industry in general and construction in particular to solve their manpower problems. It means that the construction industry should have a steadier supply of workers. With apprentices being drafted systematically, contractors can plan their projects better, knowing in advance just how many workers can be expected on the job.

The executive order was based on recommendations by the Federal Committee on Apprenticeship and the National Labor-Management Manpower Policy Committee. H. E. Foreman, managing director of The Associated General Contractors of America, and a member of the apprenticeship committee, and James D. Marshall, A.G.C. assistant managing director, an alternate, have sought this deferment policy on behalf of the association.

"Bona Fide" Programs Only

Only those apprentice programs that are considered "bona fide" come under this change. This means that only those that have been in existence for at least one year, which are



At D. C. graduation—The officials attending the second annual commencement exercises of the Joint Carpentry Apprenticeship Committee of Washington, D. C., are from left to right: Welton A. Snow, secretary of the national Apprenticeship Committee and manager, Building Contractors' Division, The Associated General Contractors of America; Harold Cladny, M. Cladny Construction Co., Inc., chairman of the joint committee; Charles W. Humphreys, Mohler Construction Co., toastmaster of the evening; Nicholas R. Loope, apprentice training director of the joint committee; William F. Patterson, director, National Bureau of Apprenticeship, Department of Labor; O. William Blaier, second general vice president, United Brotherhood of Carpenters and Joiners of America; and Ansel R. Cleary, assistant director, Bureau of Apprenticeship.

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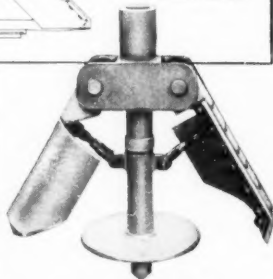
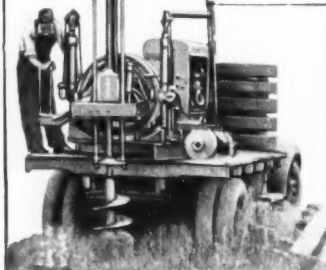
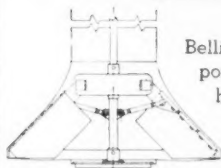


SAVE TIME, LABOR, MATERIAL

Drill BELLED PIER HOLES WITH A BUDA EARTH DRILL and BELLING ATTACHMENT

DRILL FOUNDATION PIERS

Belling tool in cutting position at bottom of hole. Note contour of the hole.



Buda Model HBR Earth Drill.
Drills diameters to 52". Depths to 24 ft.

Cut costs, save material and speed production of foundation or anchor pier holes with a Buda Earth Drill and the new Belling Tool. Quickly attached to the Earth Drill spindle, the Belling Tool enlarges the bottom of a drilled hole to the proper bell shape to provide more bearing surface for positive anchoring of concrete.

Belling action is positively hy-

draulically controlled as the drill spindle is fed down into hole. Excavated material is gathered into the Belling Tool and brought up on the Bottom Plate. Belling Tools are available for bored holes 12" to 42" in diameter; maximum diameter of bell 2 to 2½ times diameter of hole on most sizes. Ask your Buda Earth Drill Distributor for complete details. Write for Bulletins, Specifications, Prices.

BD 10

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THE BUDA COMPANY
Harvey, Illinois

COAST TO COAST

APPRENTICE TRAINING

soundly sponsored and properly certified will be considered under the plan.

At the same time Mr. Truman amended the Selective Service Regulations and declared that "necessary employment" exists when the work is considered necessary to the national health, safety or interest or when these conditions exist:

"(1) The registrant is, or but for a seasonal or temporary interruption would be, engaged in such activity.

"(2) The registrant cannot be replaced because of a shortage of persons with his qualifications or skill in such activity.

"(3) The removal of the registrant would cause a material loss of effectiveness in such activity."

Necessary Apprentices

Likewise an apprentice active in a training program may be considered "necessary" to the country when the following conditions are met: The training program meets the standards of Selective Service, when the program has been accepted by the director of Selective Service for deferment purposes and the apprentice has completed the minimum amount of training prescribed by the draft agency and the apprentice is meeting the performance standards prescribed by the director of Selective Service.

Draft officials define "acceptable" apprentice training programs as those which (1) offer training in an occupation which has been learned in a "practical" way through on-the-job training, (2) require 1,000 or more hours of work experience to learn and (3) are clearly identified and commonly recognized throughout the industry.

Gen. Lewis B. Hershey, director of Selective Service, stated that the program must be an organized plan employing or training one or more apprentices in an apprenticeable occupation as defined above. The program must also have a sponsor charged with training the apprentice. Gen. Hershey defined a sponsor as one or more employers, a joint apprenticeship committee, a trade union or an association of journeymen.

Such programs must also require 144 hours of trade school work per year for the apprentice; must be more than a part of an occupation normally learned through apprenticeship; and must involve skills broad enough to be accepted by similar occupations in the industry. In other words, not restrict the worker to the job of only one employer.

STANDARD FORMS

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Prepared by The Associated General Contractors of America and Cooperating Bodies

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2.	Accident Prevention Manual (Revised and enlarged 1949)	3.00	30.00	\$210.00
CONTRACTS				
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4.	Standard Building Contract of the American Institute of Architects—Revised 6th Edition	.50	—	47.50
5.	Subcontract form—American Institute of Architects—Revised 5th Edition	.10	—	9.50
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17.	Job Overhead Summary	.10	.50	3.00
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22.	Equipment Record—Cardboard	.10	.50	3.50
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24.	Standard Pre-Qualification Questionnaires and Financial Statements for Prospective Bidders—Complete in Cover	.20	1.80	12.00
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32.	A.G.C. Code of Ethical Conduct	.10	.50	3.00
33.	Concrete Mixer Standards	—	—	—
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43. A.G.C. SOCIAL SECURITY FORMS

Form SS1: Application for Employment; Form SS2: Employees' History Record; Form SS3: Employees' Employment and Earnings; Form SS4: Payroll. List of prices and styles will be furnished to A.G.C. members on request.

USE THE CONVENIENT COUPON TO PLACE YOUR ORDER

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			24. _____	37. _____	TOTAL COST _____
			25. _____	38. _____	

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Gentlemen: Enclosed find check for \$_____ for which please send materials as ordered by number herewith.

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August 1952

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#8 of a Series

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WITH OPEN PUMPING, BOTTOM ROSE 6 INCHES OVERNIGHT

THIS EXCAVATION, 25 ft from Broadway River, was planned with steel cofferdam plus ordinary open pumping. But, on reaching subgrade at elevation -12, several very heavy boils were noted and bottom did, in fact, rise 6 inches that same night.

• Like others who have once tried the Griffin "quick-dry" method, this leading contractor called for it again. Soil was tricky—very fine sand with intermediate layer of river muck. Yet Griffin Wellpoint system took only 48 hrs to end all boiling action, give dry stable subgrade and write a good concluding sentence to the story: "Job completed on schedule."

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ACCIDENT PREVENTION

Rise of Accidental Deaths Continues

• Safety Council's 1951 Survey Shows 93 per 100,000 Workers

» FATAL ACCIDENTS in construction grimly followed the general industrial trend upward for the second straight year in 1951.

Construction fatalities numbered 2,500 out of a total of 16,000 suffered by industry in general last year, according to National Safety Council statistics. This is at the rate of 93 deaths per 100,000 workers in construction as compared with 27 per 100,000 for all industries.

Construction workers, reversing a general industrial trend, last year showed an increase in the number of accidents but the accidents they had were less severe. The frequency rate of construction accidents per 1 million working hours for 1950 was 19.34 as compared to 20.92 for last year. The severity rate, or days lost per 1,000 working hours, for 1950 was 2.72 against 2.46 in 1951.

These figures were recently made public in the National Safety Council's annual survey of accident rates in the nation's 40 major industries.

Utilities and agriculture were the only industrial groups showing a decline in the number of deaths. In utilities the decrease was slight and in agriculture the decrease corresponded to the decrease in the number of farm workers.

Figures Differ From BLS

However, when the Safety Council's 1950 figures are compared with those gathered by the Bureau of Labor Statistics the results in many cases are not even close. In the case of construction injury rates for 1950 the Safety Council based its report on 506 sources studied and determined the frequency rate to be 19 injuries per 1 million hours worked. The BLS, which reported 41 similar injuries per million hours worked, based its figure on 5,606 sources. The Safety Council reported a severity rate for the construction industry to be 2.72 days lost per 1,000 man hours whereas the BLS severity rate was 3.8 days lost.

Recognizing the large differences in some of its figures as compared with those of BLS, the council stated in the survey that the "differences exist in the two sets of rates because each represents the experiences of a different group. The National Safety Council rates are based principally on the experience of its members. BLS rates are based on a larger sample of all industry and probably are more representative of industry in general."

Ranks Near the Bottom

The construction industry ranked close to the bottom—35th out of 49 industry categories—for both frequency and severity rates. It was surpassed in accident frequency in the following order of descent: mining (other than coal), marine transport, clay products, coal mining and lumber. In the same order for the severity of accidents, groups that topped the construction industry are mining (other than coal), marine transport, lumber, quarry and coal mining.

The safest segment of the construction industry over the 3-year period from 1949-51 was marine construction,

Indirect Cost of Accidents

The accident: A tunnel contractor was using a Lima travel crane with a clamshell to remove some rock around the portal area of a tunnel project. At an elevation of 1,300 feet, the operator was extending the boom slightly above the horizontal position when the weakened cables broke, causing the boom to drop 90 ft. hitting a rock ledge and gantry rail.

Direct cost: No one was injured. Therefore, there were no medical costs.

Proximate results: A 20-foot section of the boom plus the nose section were damaged where it struck the rock ledge. A hole was torn in the web of the I-beam supporting the gantry rail by the tip of the crane.

Indirect cost: Estimated damage was \$1,760, with \$1,500 for the destroyed section of the boom and \$260 for repairs to the gantry rail.

Prevention: Demand systematic inspection of all wire rope and see to it that crane booms are operated at an increased angle above the horizontal to avoid excessive strain on the boom and cables.

ACCIDENT PREVENTION

which includes piers, seawalls, underwater pipelines, etc., showing slightly less than 10 accidents per 1 million man hours (frequency) and 1.66 days lost per 1,000 man hours (severity). This part of construction replaced concrete bridges and dams, which boasted the fewest accidents in 1950, as the safest branch of the industry.

Next came earth dam work with a 14.02 frequency rate and a 3.33 severity rate. Public utility work followed with 18.69 (frequency) and 2.33 (severity); highway construction next with 18.89 (frequency) and 2.17 (severity); while general building showed 23.55 (frequency) with 1.75 (severity). Concrete bridges and dams registered 26.17 (frequency) and 6.40 (severity). Tunnel, caisson and shaft work had a 34.26 frequency and a 4.74 severity rate; steel erection followed with a 37.26 frequency rate and 7.34 severity rate.

Michigan, Dallas Units Lead

The Michigan Road Builders Association and the Dallas Chapter of The Associated General Contractors of America lead their respective "leagues" in making complete accident reports for the first nine months of this program year. A.G.C. Safety Director Harry Kirk reveals.

The year runs from October of one year to October of the next. Members wishing to cooperate in the accident prevention program of the association can still file their reports beginning with October 1, 1951.

Chapter standings for the first nine months of the current program year are as follows:

Chapters With Over 35 Members

Name	Per cent	Rank
Michigan Road Builders Association	62.6	1st
Houston Chapter	45.1	2nd
Constructors Association of Western Pennsylvania	42.9	3rd
A.G.C. of Minnesota . . .	33.6	4th
A.G.C. of Missouri	28.4	5th

Chapters With 10 to 35 Members

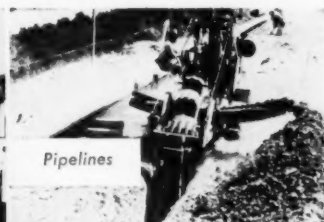
Dallas Chapter	94.1	1st
Milwaukee Chapter . . .	77.8	2nd
Chattanooga Chapter . .	68.8	3rd
Pennsylvania Builders Chapter	61.	4th
A.G.C. of Delaware	30.	5th



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CHAPTERS • BRANCHES

Mahoning and Shenango Valley Charter

• Wallstrom Heads New A.G.C. Chapter in Ohio Area



George W. Wallstrom, second from the left, president of the newly formed Mahoning and Shenango Valley Chapter receives the official A.G.C. charter from Welton A. Snow, manager, Building Contractors' Division, National A.G.C., Washington, D. C. From left to right are James P. Lombard, former acting president of the chapter, Mr. Wallstrom, John E. Morley, executive secretary, and Mr. Snow.

» THE MAHONING and Shenango Valley Chapter, A.G.C., was chartered June 13, 1952, making the new group the 120th chapter of The Associated General Contractors of America.

An outgrowth of the Builders Association of Mahoning Valley, the new chapter is centered around Youngstown, Ohio, and has a charter membership of 17 building contractors. The territory covered by the chapters for building construction includes Trumble, Mahoning and Columbiana Counties in Ohio and Mercer and Lawrence Counties in Pennsylvania.

Officers of New Chapter

The charter was presented to Chapter President George W. Wallstrom, Geo. W. Wallstrom, Inc., by Welton A. Snow, manager of the Building Contractors' Division, National A.G.C., Washington, D. C. Mr. Wallstrom succeeded James P. Lombard, J. P. Lombard Co., who was president during the organizational period of the chapter.

Other officers include John E. Morley, Youngstown, executive secretary; Paul Johnson, Adolph Johnson & Son, vice president; Isadore Polonsky, Emanuel Katzman Co., secretary; and Philip Grace, Heller-Murray Co., treasurer. Mr. Morley's offices are located at 211 North Champion Street, Youngstown.

Maxon Co. Executive Dies

Brig. Gen. Nelson S. Talbott, vice president of the Maxon Construction Co., Inc., died of a heart attack last month in Dayton.

General Talbott, who served in three wars, retired June 10 at the age of 60 as deputy director of procurement and production at Air Materiel Command headquarters, Wright-Patterson Air Force Base, but was retained as a civilian consultant.

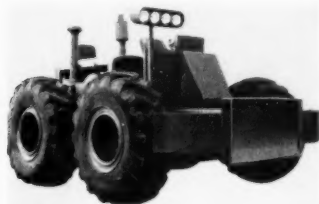
Recalled to active duty Jan. 2, 1951 as brigadier general, he served in the procurement post where he supervised several field headquarters offices handling Air Force contracts with industries and inspected materials. Before he died, the field had planned to hold a review in his honor last month at which he was to have received the Legion of Merit.

In 1947, for the Maxon Construction Co., he went to Guam to survey a multi-million-dollar contract to build naval defenses on that outpost with two other firms.

In addition to his construction work and military career, General Talbott, a widely known industrial and financial leader, was active in philanthropic work, real estate holdings, varied business ventures and aviation medicine research.

NEW EQUIPMENT • MATERIALS

Pusher Unit—R. G. LeTourneau, Inc., Peoria 5, Ill. "Tournatractor," for use when dozers are used exclusively as pushers, is new version of "Super C Tornadoizer" with dozer blade, power control unit, A-frame and dozer controls omitted. In their place is massive billet, 3' x 15" and spanning width of machine. On billet is large pusher plate. "Tournatractor" can be equipped with torque-converter and is adaptable to pulling operations, either with rear power-control unit or with drawbar alone. Machine is offered with variety of tire choices. Recommended are either 21.00 x 25 or 18.00 x 25 tires for operations in clay, rock or muddy conditions, and 65" wide-base tires for operations in loose, sandy material.



"Tournatractor"

Surveying Instruments—C. L. Berger & Sons, 37 Williams St., Boston 19. New "N" line consists of convertible transit-level, heavy-duty 12" dumpy level, service transit-level and hand level. Convertible transit-level is designed for laying out and measuring horizontal and vertical angles, leveling, measuring differences in elevation, setting building lines, plumbing walls and columns. It has 12" erecting-internal focusing, hard bronze telescope; rack and pinion adjustment; 22 power coated optics and steel spindle. Verniers read to 5 minutes. Dumpy level, for setting grades and lines, measuring or laying off horizontal angles, running profiles, establishing foundation elevations, has 12" erecting-internal focusing, hard bronze telescope; rack and pinion adjustment; 22 power coated optics, steel spindle. Horizontal circle is graduated in single degrees, with vernier reading to 5 minutes. Service transit-level combines 10-power, 10 1/2" erecting telescope, rack and pinion focusing, cross hairs in fixed focus. All parts of hand level are permanently fitted. It has stabilized internal focusing and interior permanently mounted level vial.

THE CONSTRUCTOR, AUGUST 1952

Learn Why you get MORE for YOUR MONEY in a... ROGERS TRAILER!



You'll find the new catalog interesting and informative in terms of the complete line of Rogers Trailers, one or more of which will best suit your job hauling requirements.

A "point by point" comparison of Rogers specifications and construction features with those of other trailer makes is your best assurance that you'll get MORE for your Money in a ROGERS TRAILER.

MAIL THIS
COUPON NOW!
and learn why
you get more
for your money
in a...
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EXPERIENCE
builds 'em



PERFORMANCE
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ALBION, PENNA.

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Company.....
Address.....
City..... Zone..... State.....

223 ORCHARD STREET

Export Office: 50 Church St., N. Y. 7, N. Y.
Cable Address: "Brosrites"

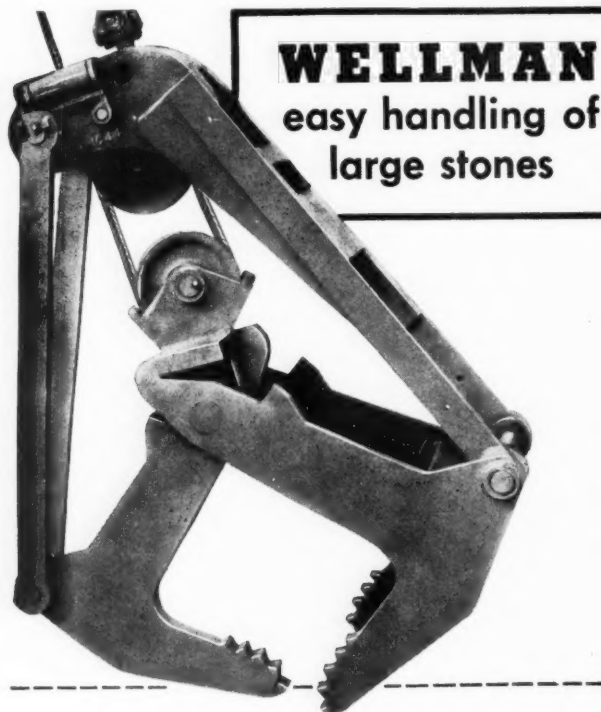


"RODGERS I BEAM OR GIRDER TRAILER"

Heaters—*Master Vibrator Co.*, 105 Davis Ave., Dayton 1, Ohio. Three new space heaters provide instant heating. Model B-140 has 140,000 B.T.U. capacity per hour, uses kerosene for fuel, consuming 1 gal. per hr. Its hot air output is 800 c.f.m. It is 24½" wide, 58" long, 31" high and weighs 145 lbs. It has fuel tank and burner safety control and solenoid pump control.

Thermostat control is available extra. Model H-231 has 241,000 B.T.U. capacity per hour, uses fuel oil, consuming 1.65 gal. per hr. Its hot air output is 1,500 c.f.m. It is 29¾" wide, 51¼" long, 45¾" high and weighs 295 lbs. Model H-350 has 350,000 B.T.U. capacity per hr., uses fuel oil, consuming 2.5 gal. per hr., has hot air output of 2,500 c.f.m. It is 31½" wide, 58" long, 58" high,

weighs 360 lbs. Models H-231 and H-350 have thermostat for full automatic temperature control, fuel tank and burner safety control and overheated safety control. Independent laboratory tests show concentration of carbon monoxide in exhaust gases of kerosene-fueled heater is less than 0.001% by volume.



WELLMAN easy handling of large stones

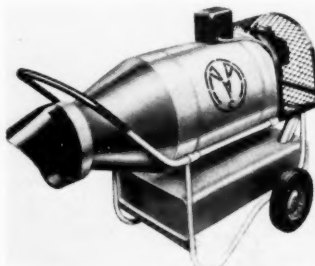
• Those big stones won't slip from the Wellman Stone Grab. Four-part closing cable reeving develops tremendous closing force on stones. Model shown has 5-ton capacity, 4½ foot jaw spread. Other capacities available.

Want Facts? Send for free descriptive bulletins.

THE WELLMAN ENGINEERING COMPANY

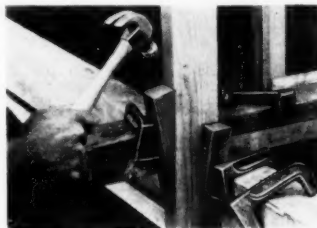
7000 CENTRAL AVENUE • CLEVELAND 4, OHIO

STONE AND WOOD GRABS • CLAMSHELL, DRAGLINE, CUSTOM-BUILT BUCKETS



Master B-140 space heater

Form Clamps—*Neptune Manufacturing Co.*, 3250 E. Olympic Blvd., Los Angeles 23. "Wedge-Grip" clamps are light in weight of one-piece malleable casting. They are designed to hold forms on inside or outside corners, columns, panels, beam sides, board clamps, etc. "Wedge-Grips" automatically grip one timber at any point while wedging another into non-slip position.



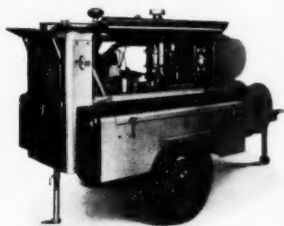
Neptune "Wedge-Grip" clamps

Lubricant Gun—*Lincoln Engineering Co.*, 5702 Natural Bridge Ave., St. Louis 20. Automatic booster gun is designed for lubricating bearings on industrial machinery requiring injection of small quantity of lubricant at high pressure, or for use as auxiliary high-pressure lubricator to service bearings requiring injection of limited quantities of special-purpose lubricants, or for cracking "frozen" or clogged bearings without use of power.

NEW EQUIPMENT • MATERIALS

operated gun. It provides range of pressures up to 10,000 p.s.i. Hydraulic coupler extension permits reaching deep-seated fittings. It holds 2½ oz. and can be refilled quickly.

Compressors—Ingersoll-Rand Co., 11 Broadway, New York 4. Three new sizes of "Gyro-Flo" portable compressors are 315, 210 and 105 c.f.m. units. Two-stage, oil-cooled, rotary sliding-vane compressor design eliminates most of problems of reciprocating units for portable service. Air is discharged at less than 200' under normal operating conditions. Compressors are equipped with "Air Glide" capacity control, stepless system that controls air output over full range from 0 to 100% capacity. Air pressure stays between 100 and 110 p.s.i. throughout entire capacity range. Choice of G.M. diesels or Continental Red Seal gasoline engines are offered for 315 and 210 c.f.m. sizes, and Continental gasoline engine powers 105.



Ingersoll-Rand "Gyro-Flo" compressor

Engines—Ford Motor Co., Dearborn, Mich. Three heavy-duty industrial engines are Models 317, 279 and 215. Numbers correspond to engines' displacement in cu. ins. Model 317 is rated at 140 brake h.p. at 2,800 r.p.m. It is V-8 with 3.8" bore and 3.5" stroke. Model 279 is rated at 125 brake h.p. at 2,800 r.p.m. It is V-8 and has 3.56" bore and 3.5" stroke. Model 215 is 6-cylinder engine rated at 93 brake h.p. at 2,800 r.p.m. It has 3.56" bore and 3.6" stroke.

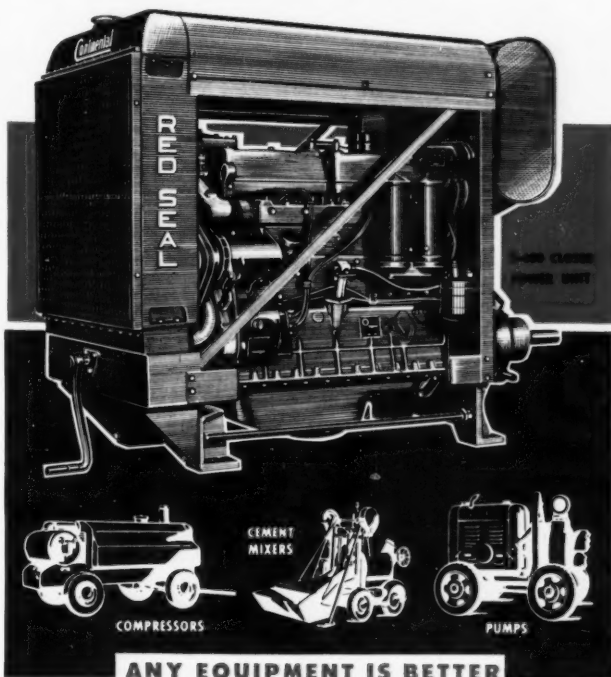
Tractor Bucket—Earl H. Pence & Co., San Leandro, Calif. Hydraulic-operated front-end bucket is designed for use on long-track "Agricat," 6' long crawler tractor. Bucket has 5 cu. ft. capacity. It lifts to 72" from ground level and can be lowered 4" below track level.

THE CONSTRUCTOR, AUGUST 1952

50 years of QUALITY LEADERSHIP



Year after year, ever since 1902, Continental engines have been proving their dependability in a steadily-lengthening list of specialized machines. Today, no matter what the exact requirement of the job, there's a Continental Red Seal model—gasoline, Diesel, or LPG—engineered and built to meet it down to the last detail—a model with the proper performance characteristics, profile, shape and weight. In construction equipment, as in vehicles, farm machines and aircraft, more and more leading makes now feature Continental Red Seal power.



ANY EQUIPMENT IS BETTER
WITH CONTINENTAL RED SEAL POWER

Continental Motors Corporation

MUSKEGON, MICHIGAN

PARTS AND SERVICE EVERYWHERE

New Machine for Efficient Patching

• Barber-Greene's "Mixall" Produces High-Type Mix

With increasing amount of road and street maintenance being performed by contract, new machine for patching and small job paving introduced by Barber-Greene Co., Aurora, Ill., will be of interest to many highway contractors. "Mixall" is portable, one-unit dryer-mixer combination which

provides on-spot production of same high-type hot bituminous mix used in highway construction. Patch failures, caused by inadequate drying of aggregate, or use of cold, undried and unheated aggregate, or inadequate mixing, resulting in poor coating, will be substantially reduced by new machine

which duplicates heating and mixing principles embodied in Barber-Greene's large continuous hot-mix plants.

Designed for towing at normal truck speeds, "Mixall" is mounted on 2-wheel pneumatic tired chassis, with adjustable towing hitch to accommodate trucks of varying sizes. It can be operated without unhitching, or it can be detached and set in level position through use of hydraulic jack-leg support built into towing hitch.

Upper edge of power-operated skip



**MORE
DOLLARS
IN YOUR...
POCKET!**

WACO MASON'S SCAFFOLDING EQUIPMENT ON YOUR JOB PUTS HARD DOLLARS IN YOUR POCKET

1. Waco Mason's Jacks eliminate ground leveling—are speedily set-up, compact and one-man handled.

2. Waco Sectional Scaffolding has Speedlock assembly, fewer loose parts, built-in ladders and floating coupling pins, and pivoted cross-braces. Your local Waco distributor will furnish the sizes and models suited to your needs.

3. Waco Portable Elevators (cap. 1000 Lbs.) are versatile, safe, remote controlled and two-man erected, furnished with gas or electric power units.

4. Waco Material Hoisting Towers (cap. 1000 Lbs.) assemble with standard Waco Sectional Scaffolding, are remote controlled, easily erected and gas or electric powered.



WILSON-ALBRECHT CO., INC.

3565 WOODDALE AVE. MINNEAPOLIS 16, MINN.
SALES AND RENTAL INVENTORIES IN PRINCIPAL U. S. CITIES



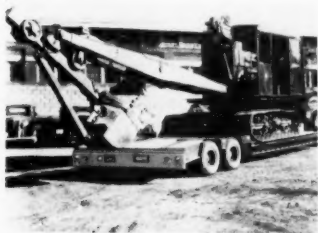
is 14" above ground level, permitting charging with wheelbarrow or by hand shoveling. Skip discharges aggregate into rotary drying drum. Flights around drum's inner circumference lift aggregate particles and drop them repeatedly through blast of hot gas and flame provided by oil burner. Heated blast drives off moisture removed from aggregate, exhausting it through twin stacks. Drying cycle is set at any predetermined number of drum revolutions.

From drum, heated, dried aggregate is chuted into twin-shaft pugmill which, by pressure and kneading action, completely and evenly coats each particle. At conclusion of mixing cycle, entire bottom of pugmill opens, permitting mix to fall into wheelbarrow, or directly on ground in area being patched.

Capacity depends on type of mix and amount of moisture to be removed. With hot mix, capacity ranges up to 5 tons per hour. Machine can produce 10 tons per hour of cold mix.

"Mixall" can also be used to produce stabilized base materials, to mix portland cement concrete, to thaw frozen aggregates and abrasives for winter-skid control.

Screens—*Kolman Manufacturing Co., 5933 W. 12th St., Sioux Falls, S. Dak.* Multiple-deck vibrating screens 3' and 4' wide and 8' and 10' long are offered in Series C line. Also added is single-deck model 42" wide and available in 61½' or 7' lengths, designed for use with large bucket loaders or 30" belt portable conveyors.



Rear extension acts as mudguard—With many states requiring trailers as well as trucks to be equipped with mud flaps at rear, the sloping rear frame extension of a Rogers trailer serves a dual purpose. While design of extension is to provide easier loading and additional carrying space, it prevents throwing of mud to rear.

Truck Bodies and Hoists—*Converto Manufacturing Co., 3d and Green Sts., Cambridge City, Ind.* Medium-duty line of bodies and hoists are designed for trucks of 1½-, 2- and 2½-ton sizes. Two styles of hoists are offered: "double-arm" type for extreme loads, "direct" for average loads. Both elevate truck body to 60° dumping angle in few seconds. Standard body width is 61½'.

Earth-Boring Tool—*Petersen Engineering Co., Santa Clara, Calif.* "Pengo Jr." pilot bit for Danuser augers features "fishtail" design which eliminates centerpoint and resulting tendency to pivot on stones or hard ground. Forward-angled cutting lips on either side of center line slice pilot hole ahead of wedge-shaped main pilot blade which in turn breaks up earth ahead of auger helix.



New Scruggs, Vandervoort, Barney department store, Clayton, Mo.

Architect: Harris Armstrong.

Consulting Engineer: Neil J. Campbell.

Contractor: Gamble Construction Co.

LACLEDE JOISTS

for

STRENGTH... ECONOMY!

For lightweight, functional design, builders, architects and engineers wisely specify these Laclede Steel Products for floor and roof construction.

WELDED WIRE FABRIC • FORM & TIE WIRE
MULTI-RIB REINFORCING BARS • JOISTS
CORRUGATED STEEL CENTERING

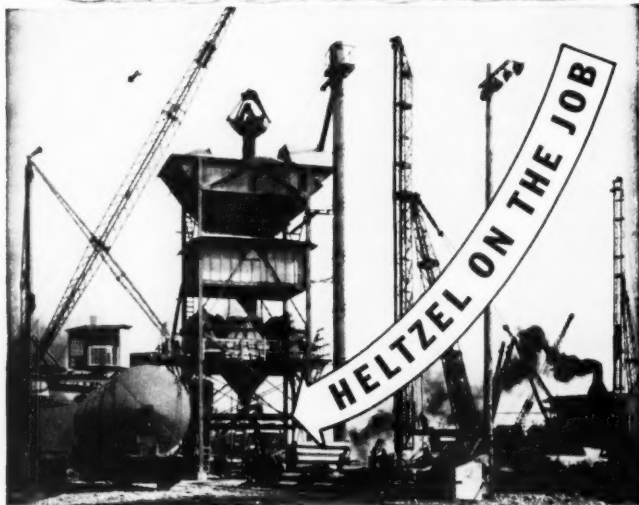


LACLEDE STEEL COMPANY

St. Louis, Mo.



HELTZEL HELPS CONSTRUCTION DOLLARS GO FURTHER



with
**RAYMOND CONCRETE
PILE COMPANY**
at
**GREAT LAKES
STEEL
CORPORATION**

PROBLEM: High capacity batch plant to simultaneously charge both a pumpcrete operation and a fleet of transit mix trucks.

ANSWER: Heltzel engineered batch plant that worked both pumpcrete and transit mix operations with practical perfection and helped Raymond Concrete Pile Company run ahead of schedule.

The installation consists of a basic Heltzel 300-ton, 4-compartment plant (three 70-ton aggregate compartments; one 311-bbl. cement compartment); a 70' high, 250-bbl. per hour bulk cement elevator; a 1000-bbl. bulk cement recirculator with 33' 6" screw conveyor; a 2-cubic yard batcher to charge two tilt mixers—front end charging; special columns and braces to take care of height.

ASK FOR HELTZEL BULLETIN K-37 DESCRIBING PLANTS AND ENGINEERING SERVICE FOR CENTRAL MIX, TRANSIT MIX AND CONCRETE PRODUCTS OPERATIONS.



The Heltzel Steel Form & Iron Company

Construction Equipment Since 1910



WARREN, OHIO

NEW LITERATURE

Trencher—Parsons Co., Newton, Iowa. Model 215 "Pipeline Trencher" is described in 4-page bulletin. Field photos show machine digging pipeline trenches. Large picture and captions demonstrate features of trencher.

Tractor Maintenance—Caterpillar Tractor Co., Peoria 8, Ill. Multi-colored cartoon-type booklet (Form 30275) uses scenes familiar to operator to present factory-prescribed techniques in caring for Caterpillar wheel-type DW21, DW20 and DW10 tractors. Reduction of repair bills and elimination of "down time" is purpose of booklet, which deals with many specific procedures in connection with routine engine maintenance.

Spreader—Gar Wood Industries, Inc., Findlay Division, Wayne, Mich. Features of Buckeye Model 5 spreader are presented in Bulletin F-130. Specifications are given and spreader attachments are listed.

Excavator—Harnischfeger Corp., Large Excavator Division, Milwaukee 46. Model 955-A 2½-yd. excavator is presented in Bulletin X122-1. Photos show machine working on variety of projects throughout country. Close-up pictures and data describe its features. Convertibility for service as shovel, dragline, clamshell or crane is explained.

Pipe—Armco Drainage & Metal Products, Inc., 2280 Curtis St., Middletown, Ohio. Large diameter "Multi-Plate" pipe is presented in 24-page manual, MP-1652. It explains engineering and design features of pipe, tells where and how to use it and illustrates variety of installations. There is section on technical data, with charts, tables and graphs. Checklist of company's other products is included.

Truck Mixer—Chain Belt Co., 4625 W. Greenfield Ave., Milwaukee 1. "Rex Adjusta-Wate Moto-Mixer" is described in detail in Bulletin 52-32. Arrangement of machine so that weight on rear axle can be adjusted to conform to state law is explained. Pictures and descriptions show basic mixer, separate or truck engine drive and operation of hopper. Available options are shown.

Steel Windows—Detroit Steel Products Co., 3143 Griffin St., Detroit 11. Catalog gives descriptions, speci-

NEW LITERATURE

fications, sizes, uses and advantages of "Fenestra" industrial pivoted windows, commercial projected windows and security windows, used separately and in combinations. It includes "Fenestra" continuous windows which are used mainly for toplighting in monitor and sawtooth roof construction. Construction features, hardware, section drawings and installation details in various kinds of construction are illustrated and described. Special section describes hot-dip galvanizing process for maintenance-free steel windows. Several pages are devoted to mechanical operators for various types of windows. . . . Second Detroit Steel catalog describes windows for hospitals, schools, offices, institutional and public buildings. Seven types are presented: Intermediate casements; intermediate projected and intermediate combination windows; psychiatric windows; awning-type windows; psychiatric package windows; detention windows and screens. Besides illustrations, descriptions and sizes, catalog shows construction features and installation details. Complete specifications are given for all products.

Trailers—*Athey Products Corp.*, 5631 W. 65th St., Chicago 38. Complete line of Athey rubber-tired hauling trailers is presented in cartoon-style booklet. Describing PD-20, PD-10Q and PD-10GP, booklet has more than 15 illustrations and carries theme of 2 contractors discussing job application and products.

Compressors—*Davey Compressor Co.*, Kent, Ohio. Folder (Form E-237) describes all types of 105 c.f.m. Davey compressors. Gasoline, diesel and electric-powered trailers, "Auto-Air" truck-mounted units and industrial stationary machines are listed and illustrated. Complete mechanical specifications are included in reference table.

Powder-Actuated Tool—*Ramsel Fasteners, Inc.*, 12117 Berea Road, Cleveland 11. Specification booklet on "Tru-Set" fasteners and accessories presents 2 sizes of Ramsel fastening tool and lists fasteners and accessories, including drive pins, external and internal threaded studs, utility head threaded studs, fastening charges, fixtures.

Lay TEN TIMES MORE PIPE Per Pound of Material Handled

Armco Corrugated Metal Pipe is strong, yet light in weight. In contrast, rigid sectional pipe and monolithic box structures of the same capacity weigh about ten times as much. This means you can install ten times more Armco Pipe per pound of material handled.

With the high cost of today's labor, this savings in handling can be tremendous. In addition, installation goes along faster and easier. Jobs are completed ahead of schedule. This means more profit for you.

But let's get specific. Suppose you

need a 15-inch diameter culvert, 40 feet long. Then you should have two 20-foot lengths of Armco Pipe, plus one coupling band. Each 20-foot length, in 16 gage, weighs 260 pounds. So the total handling weight would be *only 530 pounds*—an easy, two-man task.

There is an Armco Drainage Structure to answer almost every drainage problem—in the right style, size and protective coating. Write us, Armco Drainage & Metal Products, Inc., 3902 Curtis St., Middletown, O. Subsidiary of Armco Steel Corporation.

Armco Drainage Structures



This truck is carrying 408 feet of Armco Pipe, ranging from 12 to 60 inches in diameter.

Manitowoc Shipbuilding Co. announces that the 3 principal product lines of its business will be manufactured by 3 separate corporations, instead of divisions of the parent company.

MANITOWOC ENGINEERING CORP. will manufacture power shovels, cranes, draglines and other equipment. Officials of the new corporation are J. D. West, president, C. C. Miller, vice president in charge of sales, E. B. Nickles, vice president in charge of engineering and F. W. Zimmer, sales manager.

A. W. Ginther has been appointed general sales manager of **WOOD MANUFACTURING CO.** For the past 15 years he was with Harnischfeger Corp.

Ray Rodolf has been appointed to the new position of assistant to the sales manager of **LE ROI CO.**

Paul Miller has been named sales manager of the Road Machinery Division of **THE HEIL CO.** He replaces his brother, Robert Miller, who has become sales manager of **Imces Equip-**

ment, Ltd., Toronto, Heil distributor in eastern Canada.

W. B. Lawrence, general manager, **CUMMINS DIESEL SALES CORP.**, has been elected a vice president of the corporation.

Leo M. Brown has been appointed assistant sales manager of **ST. PAUL HYDRAULIC HOIST.**

S. M. Pare has been appointed assistant manager of the construction equipment department of **BLAW-KNOX DIVISION OF BLAW-KNOX CO.** C. F. Mittelstadt has been named chief engineer of the department, succeeding L. J. Sarosdy, who will devote full time to his position as manager and chief engineer of the steel forms department.

R. S. Stevenson has been elected executive vice president of **ALLIS-CHALMERS MANUFACTURING CO.** He was formerly vice president in charge of the Tractor Division. Willis G. Scholl, formerly vice president and

general sales manager of the Tractor Division, succeeds Mr. Stevenson.

Robert G. Evans, one of the founders of **CLIPPER MANUFACTURING CO.**, has formed a new company, **ROBERT G. EVANS CO.**, to distribute masonry and concrete sawing equipment. Products will be marketed under the trade name "Target."

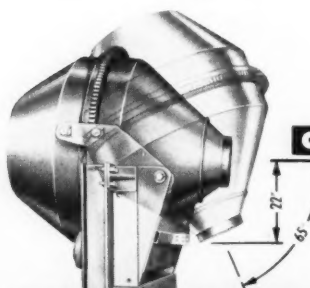
J. A. Robinson has been appointed sales manager of **VIBER CO.**

M. E. Ziegenhagen has been named advertising and sales promotion manager of **WORTHINGTON CORP.** . . . Paul Diserens has retired as director of research and development. He had been with Worthington for 43 years. Ralph M. Watson has been named his successor.

Obituary

R. C. Brower, secretary-treasurer and director of **The Timken Roller Bearing Co.**, died July 13. He was 60 years of age. He had been with Timken since 1923.

Alan B. Wells, retired assistant treasurer and assistant secretary of **Universal Atlas Cement Co.**, with which he was connected for 43 years, died June 21.



FOR CONVERTING TO CENTRAL MIX

As it requires less headroom, the TILT-UP SUPREMIER is the only mixer feasible in most plants. It's easy to install, no raising of the plant or lowering of drive.

FOR A PACKAGE PLANT

Reduced headroom requirement means reduced height, construction and power costs. Efficiently permits dry batch in one lane, central mix in the other.

FOR A SEMI-PORTABLE PLANT

Crane feeding is easy with SUPREMIER. Separate A-frame mounting with bin structures bolted for quick, easy set-up provide real flexibility for your rush defense jobs.

CLEAN UP with

Only the SUPREMIER

TILT-UP, 3-3½ yard hydraulically controlled mixer can give you all these advantages: lower headroom requirements—steeper discharge of 65°—no segregation—reduced thrust—and virtually fixed discharge. The hydraulic system is part of the unit—no costly compressor to buy. The unique features of this mixer make it the ideal mixer. . .

Aggregate Bins • Cement Bins • Cement Storage • Elevators
Conveyors • Ready Mix Plants • Expressway Semi-Portable
Plants • Dry Batch Plants

Manufactured by

L. BURMEISTER CO. 4535 W. Mitchell MILWAUKEE 14, WIS.

Assistant to President

Well established, medium size structural steel fabricating plant in middlewest desires a man as Assistant to the President with potential of General Manager. Must know structural steel and have both technical and business training, including accounting. Construction experience appropriate. Must be all-around man, administrator as well as engineer, and of a stable and even tempered nature. Age 35-40. Salary commensurate with qualifications. Replies held in confidence. Address Box 81, The Constructor, 1227 Munsey Bldg., Washington 4, D. C.

Manufacturers' addresses are listed on page 70

Aggregate (Light-weight)
Great Lakes Carbon Corp.,
Building Products Division

Air Entraining Agents
A. C. Horn Co.

Asphalt Plants (Portable)
Barber-Greene Co.
Iowa Mfg. Co.
White Mfg. Co.

Axles (Truck)
Eaton Mfg. Co., Axle Division

Backfillers
Bucyrus-Erie Co.
Cleveland Trencher Co.
Gradall Division
Harnischfeger Corp.
Parsons Co.

Batchers
Blaw-Knox Division
Butler Bin Co.
Construction Machinery Co.
Heltzel Steel Form & Iron Co.
C. S. Johnson Co.

Bearings (Anti-Friction, Tapered Roller)
Hyatt Bearings Division
Timken Roller Bearing Co.

Bins
Blaw-Knox Division
L. Burmeister Co.

Butler Bin Co.
Heltzel Steel Form & Iron Co.
Iowa Mfg. Co.
C. S. Johnson Co.

Bits (Detachable Drill)
Timken Roller Bearing Co.

Blades (Grader, Maintainer, Snow Plow, Bulldozer, Scarifier)
Paper-Calmenson & Co.

Blasting Accessories
American Cyanamid Co.

Bridges
American Bridge Co.
Armed Drainage & Metal Products

Buckets (Clamshell & Dragline)
Blaw-Knox Division
Bucyrus-Erie Co.
Harnischfeger Corp.
C. S. Johnson Co.
Wellman Engineering Co.

Buckets (Concrete)
Blaw-Knox Division
Construction Machinery Co.
Heltzel Steel Form & Iron Co.

Building Papers
Sisakraft Co.

Buildings (Steel)
Allied Structural Steel Cos.
American Bridge Co.
Armed Drainage & Metal Products

International Steel Co.
Macomber, Inc.
Truscon Steel Co.

Bulldozers
Baker Manufacturing Co.
Bucyrus-Erie Co.
R. G. LeTourneau, Inc.

Car Pullers
Clyde Iron Works

Cement (Common and Special)
Lone Star Cement Corp.
Marquette Cement Mfg. Co.
Universal Atlas Cement Co.

Cement (White)
Trinity White, General Portland Cement Co.
Universal Atlas Cement Co.

Clamps (Hose)
Dixon Valve & Coupling Co.

Compressors
Allis-Chalmers Co.
LeRoi Co.

Concrete Curing Material
A. C. Horn Co.
Sisakraft Co.

Concrete Mixers, Pavers, Tampers
Chain Belt Co.
Construction Machinery Co.
Foote Co.
Jaeger Machine Co.

Knickerbocker Co.
Koehring Co.
Kwik-Mix Co.
T. L. Smith Co.
Worthington Corp.

Concrete Vibrators
Electric Tamper & Equipment Co.
Independent Pneumatic Tool Co.
Mall Tool Co.
Master Vibrator Co.
Vibro-Plus Products, Inc.
White Mfg. Co.

Conveying Machinery
Barber-Greene Co.
Chain Belt Co.
G. N. Crawford Equipment Co.
Iowa Mfg. Co.
Link-Belt Co.

Cranes
Austin-Western Co.
Bucyrus-Erie Co.
Cleveland Trencher Co.
Clyde Iron Works
Harnischfeger Corp.
Koehring Co.
R. G. LeTourneau, Inc.
Link-Belt Speeder Corp.
Michigan Power Shovel Co.
Cranes Contd. to P. 68



NEW!

Belt Stretcher by FARNCO

Builders of Nationally Recognized All Aluminum Conveyors

Something new in belt lacing!
Great Power with little effort!

Belt breakdowns now can be quickly repaired by the Farnco Belt Stretcher up to 90% faster. Merely clamp loose ends together, place the replacement part between and through a simple jacking movement, pull together and make final lace. Fits any belt size width from 8", 10", 12", 14" to 16".

If you value time, you'll want this handy tool as a permanent part for your repair kit.

G.N. Crawford Equipment Co.

5714 KELLY ST. PITTSBURGH 8, PENNA.

Or for further details write The Constructor, Munsey Building, Washington 4, D. C.



Get our pictorially described literature on FARNCO All-Purpose Aluminum Conveyors.

ADVERTISERS' PRODUCTS

Cranes Cont. from P. 67

Northwest Engineering Co.
Osgood Co.
Thew Shovel Co.

Crushing Machinery

Allis-Chalmers Co.
Austin-Western Co.
Iowa Mfg. Co.

Culverts

Albert Pipe Supply Co.
Armo Drainage & Metal Products

Cutters (Abrasives)

Wodack Electric Tool Corp.

Decking (Roof Steel & Aluminum)

Macomber, Inc.

Derricks

Clyde Iron Works

Doors (Metal, Wood)

Ceco Steel Products Corp.
International Steel Co.
Kinnear Mfg. Co.
R. C. Mahon Co.
Truscon Steel Co.

Dredging Machinery

Bucyrus-Erie Co.
Harnischfeger Corp.
Northwest Engineering Co.
Osgood Co.

Drills & Drilling Machinery

Bucyrus-Erie Co.
Buda Co.
Independent Pneumatic Tool Co.
Tinken Roller Bearing Co.

Drills (Electric)

Wodack Electric Tool Corp.

Elevators (Material)

Chain Belt Co.
Iowa Mfg. Co.
Link-Belt Co.

Engines

Allis-Chalmers Tractor Div.
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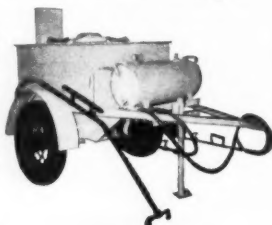
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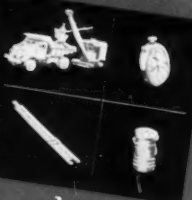
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PART I ESTIMATING PRODUCTION

JOB ANALYSIS

A basic knowledge of the job, and of the hauling equipment being considered for the job, is necessary to prepare a hauling production and cost estimate. Careful preparation and thorough analysis are re-

quired, and an accurate estimate of production must take into consideration the material being moved and the various components of a complete hauling cycle. These are as follows:

HAULING CYCLE COMPONENTS

CONTRIBUTING FACTORS

 LOAD	Size and type of loading machine. Type and condition of material to be loaded. Capacity of hauling unit. Skill of the operator.
 HAUL	Performance ability of hauling unit. Hauling distance. Haul road condition. Grades. Miscellaneous conditions affecting haul speed.
 DUMP	Destination of material. Type and maneuverability of hauling unit. Type and condition of material.
 RETURN	Performance ability of hauling unit. Return distance. Haul road condition. Grades. Miscellaneous conditions affecting return speed.
 SPOT	Maneuverability of hauling unit. Type of loading machine. Location of loading equipment.

This enlarged and revised Euclid manual shows how to make a job analysis and provides a method of estimating production and costs for off-the-highway hauling equipment. It will enable you to determine the number and size of hauling units required for any job, and the estimated

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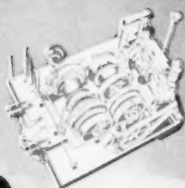
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